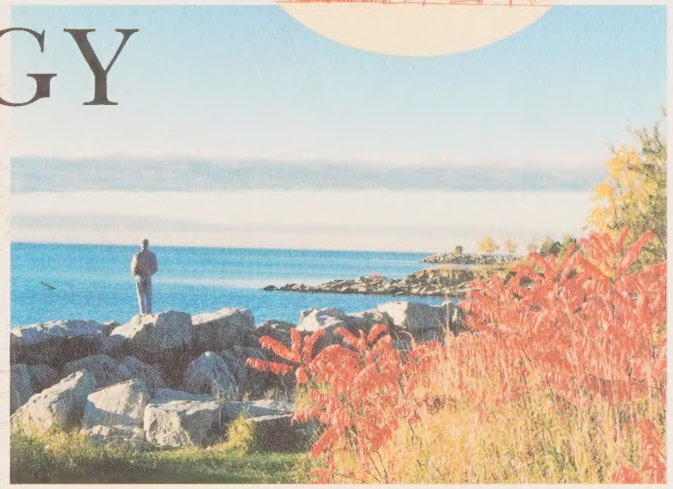
Lake Ontario Greenway

STRATEGY



Lake Ontario Greenway Strategy

WATERFRONT REGENERATION TRUST

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Waterfront Regeneration Trust

Fiducie de régénération du secteur riverain

Commissioner
The Honourable David Crombie, P.C.

Commissaire
L'honorable David Crombie, p.c.

Deputy Commissioner
David A. Carter

Sous-commissaire
David A. Carter

May 13, 1995

Dear Colleagues,

I am pleased to provide a copy of the *Lake Ontario Greenway Strategy.*

This report has been prepared by the Waterfront Regeneration Trust on behalf of the Lake Ontario Greenway Strategy Steering Committee. It represents the work of hundreds of people dedicated to the regeneration of the Lake Ontario Waterfront.

Thanks, as always, for your continued interest and involvement in this work.

Keep well, take care

David Crombie
Commissioner

207 Queen's Quay West • Suite 580, Box 129 • Toronto, Ontario M5J 1A7
Telephone (416) 314-9490 • Facsimile (416) 314-9497

Acknowledgements

This report of the Lake Ontario Greenway Strategy represents the work of hundreds of people who participated in the Steering Committee, workgroups, seminars, field trips and discussion sessions; undertook research; reviewed manuscripts; and/or provided written materials, graphics or photos. Their time, expertise and enthusiasm are gratefully acknowledged.

A significant part of preparing the strategy was the integration of many disciplines (environmental, social and economic) as well as interactions among a wide range of government, business, and non-government groups. Extraordinary levels of good will and hard work were brought to these discussions.

The consultants who undertook research and analysis for various aspects of the Strategy accomplished work that was often at the cutting edge of their fields (see the Bibliography).

The Strategy is being supported and implemented through the actions, funding, staff time and policies of municipal councils, conservation authorities and federal and provincial agencies. Many individuals, citizen groups, service clubs and businesses are participating in the regeneration of the waterfront. Some of these participants have been active for years in waterfront planning, trail-building, ecological restoration, tourism development and other regeneration activities. The willingness of agency staff and others to share their expertise and first-hand experience has contributed greatly to the value of the Strategy.

The Waterfront Trail is one of the most tangible expressions of the renewed interest in the Lake Ontario Waterfront. The substantial support of the Provincial government through jobs**Ontario***Capital* and other programs, and the funding and in-kind contributions made by other levels of government, the private sector, and the communities along the north shore of the Lake, are deeply appreciated.

The Waterfront Regeneration Trust would like to thank each of you for doing your part to make the *Lake Ontario Greenway Strategy* possible.

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"Protecting and restoring ecological health, a sense of community, and economic vitality"

A VISION FOR THE LAKE ONTARIO GREENWAY

Fifty years ago, the north shore of Lake Ontario was a string of communities, large and small, separated by farmland and forest, joined by two-lane roads, railways and lake shipping routes. Today, that same waterfront has become the largest urban conglomerate in the country, with the distinctions among its communities masked by subdivisions and superhighways, its waters polluted, its forests and wetlands reduced to remnants. Despite that degradation, many places on the waterfront provide a special quality of life for residents, and recreation and beauty for visitors.

Fifty years from now, what kind of waterfront will our children and other forms of life share?

Waterfront communities will be larger, that is certain, and more crowded and more diverse, with over twice the human population in the surrounding region. But the waterfront itself will have emerged as a vital focus for those communities, a special place to be cherished and visited often by local residents and tourists alike. The Waterfront Trail will be a vital link between communities, bringing people into contact with the water's edge throughout the year.

Some of us may go to the shore to find tranquillity alongside the water – water clean enough that our children can swim or fish safely. Or we might go to catch sight of the abundant wildlife in the protected natural areas and regenerated forests and wetlands that dot the shore in blocks large and small. We might stroll along the beaches and bluffs, watching the waves that continually shape the shoreline.

Most of us will visit the waterfront to play – to boat or picnic or watch birds, or to walk or cycle along paths that loop and interconnect along the entire length of the shore. We might also come to shop or dine or visit festivals in the vibrant "people places" that cluster along the water's edge. And when we come, we will notice how each community has used its waterfront heritage to create a distinctive feel, its own unique sense of place that proclaims pride in its past and confidence in its future. That pride will be reflected in a quality of design that creates memorable places and special experiences, and in the involvement of a wide range of community groups in waterfront activities.

Some of us will be lucky enough to live near the waterfront, in a variety of housing types and styles. A good many of us will find work near the water, in businesses and industries that share a sense of stewardship of the environment, or in offices in our homes. For an increasing number of urban dwellers, the daily drive to work will change, thanks to new automobile technologies, improved transit and expanded networks of commuter cycling routes. Some of those routes will be set in broad corridors of green up the river valleys that link the waterfront to the Oak Ridges Moraine and other natural habitats.

The Lake Ontario Greenway Strategy is about protecting and restoring those elements of the waterfront that we jointly value – ecological health, a sense of community, economic vitality. Fifty years from now, we will value the waterfront even more than now, and that sense of value will give us the continued commitment to work together to ensure that the waterfront is clean, green, accessible, connected, open, useable, diverse, affordable and attractive.

Executive summary

Robert Burley

Humber Bay Park East, Etobicoke

INTRODUCTION

The Lake Ontario waterfront is a significant provincial resource, which has provided generations of people with a place to live, food sources, transportation routes, drinking water, recreation and more. However, it has suffered over the years from the pressures of human activities along the shore and in the watersheds that feed into the lake.

The Royal Commission on the Future of the Toronto Waterfront developed the values and principles upon which the Strategy is based. The basic thrusts of the Royal Commission – the need to apply an ecosystem approach, to address the overlapping spheres of environment, economy and community, and to coordinate the actions of existing agencies rather than impose solutions from above – are incorporated into the Strategy. In coordinating the Lake Ontario Greenway Strategy, the Waterfront Regeneration Trust is fulfilling its mandate to coordinate the programs and policies of the Province and its agencies relating to the waterfront, and to facilitate the establishment of a waterfront trail and associated open spaces.

A great deal of progress has been made since the Royal Commission began its work in 1988 – progress in implementing specific projects; significant improvements in provincial and municipal policies; and, not least, a striking change in the way many communities view their waterfront. The Greenway Strategy reports on this progress and establishes a consensus-based blueprint for further actions. It is not intended to be a formal statement of government policy, but rather to provide a context for setting priorities, guidance on ways to achieve a shared vision, and an information base to assist decision-making.

The Greenway

The Lake Ontario Greenway encompasses the lands and waters that show a direct ecological, cultural or economic connection to the waterfront from Burlington Bay to the Trent River. It extends into the lake, generally to the 10 metre depth within which most of the nearshore coastal processes and fishery activities occur. Inland, the Greenway generally extends to the first significant rise in elevation, which often corresponds to the former Lake Iroquois shoreline. Where significant natural areas extend up major river valleys, they are usually included.

The Strategy

The Greenway Strategy provides an overview of background and context, a description of the key features of the waterfront of today, an analysis of the objectives and actions necessary to realize the waterfront of tomorrow, and an overview of implementation mechanisms and roles. A separate report, *Lake Ontario Greenway Strategy: Next Steps,* provides more detailed mapping and recommended regeneration goals and actions for each of 14 landscape units along the waterfront.

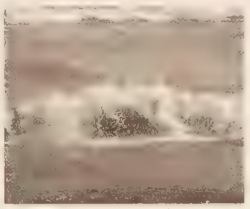
The Goal

The goal of the Lake Ontario Greenway Strategy is to foster commitment to actions that will regenerate a healthy and sustainable waterfront that is clean, green, accessible, connected, open, useable, diverse, affordable and attractive. This goal is supported by five objectives, and a series of actions necessary to achieve each objective.

Challenges and Opportunities

A number of issues recur frequently in all sections of the waterfront. They provide the central set of challenges and opportunities which this Strategy addresses:

- Access to the shore, including access to walk, boat, swim or fish; visual access; and access for people of all ages and abilities.
- Reversing environmental degradation, to restore past damage to water quality, soils and groundwater, and natural habitats.
- Economic renewal, using a revitalized waterfront as a lever to renew downtown cores and areas abandoned by industry.
- Guiding development, so that new developments contribute to regeneration and address local environmental, economic and community needs.
- Maintaining cultural values, by avoiding further loss of heritage structures, scenic landscapes, and community identity.
- Improving decision–making, both through the municipal planning system and the regulatory approvals for changes along the water's edge.
- Balancing competing objectives, by reinforcing diversity along the waterfront and respecting other community needs.



OBJECTIVES AND ACTIONS

To achieve the waterfront of the future described in the Vision, a wide range of actions is underway and planned to contribute to five broad objectives:

Objective 1

Protect the physical, natural and cultural attributes associated with the Lake Ontario Greenway

Protect significant coastal features and habitats, such as coastal processes that maintain bluffs and sand beaches, and open coast aquatic habitats for coldwater fish.

Protect waterfront natural core areas, which include 90 of the most important natural habitats within the Greenway.

Protect bioregional habitat corridors and connections, including 35 valleys connecting to the Niagara Escarpment, Oak Ridges Moraine, and Lake Iroquois shoreline, and forest/wetland corridors near the waterfront.

Protect water quality from further deterioration, particularly by preventing release of persistent toxic substances and by protecting tributary waters.

Protect places of archaeological, historic and cultural significance, including known and potential archaeological sites, historic buildings or structures, and cultural heritage landscapes.

Objective 2

Identify restoration needs and methods and encourage landowners, communities and agencies to undertake regeneration activities

Restore the supply of natural habitats that sustain biodiversity, with targets to re-establish coastal wetlands and native forest.

Target restoration programs to priority habitat types, especially to large blocks of natural habitat, valley corridors near the lake, and specialized shoreline habitats such as dunes.

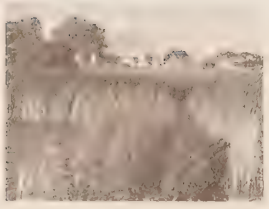
Restore natural shoreline structure and processes, using an ecosystem approach to shoreline treatment.

Restore balance to Canada Goose populations, to reduce conflicts with recreational uses.

Restore degraded waters and sediments, both at a lakewide level and through special efforts such as the Remedial Action Plan programs.

Restore sites with contaminated soils or groundwater, including former industrial, landfill and lakefill sites.

Strengthen community identity and landscape character by protecting views and vistas, developing design guidelines, and planting trees.



Objective 3

Promote greater awareness, understanding and recreational use of the waterfront and encourage community pride and participation in its regeneration

Encourage appropriate access to and use of the waterfront, making sure that sensitive habitats and neighbourhoods are protected.

Complete and upgrade the Waterfront Trail, to add to the 87% now complete, to enhance user experiences, and to provide services where needed.

Develop public understanding of waterfront processes and values, through a broad range of interpretive initiatives.

Develop community participation by involving service clubs, local industries, interest groups and the public in education, access and restoration projects.

Strengthen traditional waterfront festivals and celebrations in Greenway communities, and explore the potential for a coordinated waterfront-wide festival.

Recognize changing populations in planning waterfront recreation, to serve an aging and diverse population.

Link recreational resources with health promotion, using waterfront areas to contribute to active living programs.

Increase accessibility to all members of the community, by increasing facilities for those with disabilities and improving personal safety for all users.

Objective 4

Promote economic activities and employment on the waterfront that are compatible with other Greenway objectives

Enhance the role of existing and new economic activities, recognizing the rapidly changing nature of business and industry along the waterfront.

Ensure appropriate location and design of new development, particularly through the re-development of urban core areas with a compact form, a mix of land uses, and built form that is sensitive to its waterfront location.

Monitor and respond to changing patterns of harbour use, through a review of industrial and recreational harbour needs.

Identify and develop tourism/recreation destination areas, including 11 primary destinations with the ability to attract and serve large numbers of visitors, and 13 secondary destinations with more limited facilities.

Develop new waterfront attractions, especially within selected destination areas.

Develop joint packaging and marketing of themed waterfront experiences, to create a critical mass of tourism facilities and services.

Reduce conflicts between transportation corridors, waterfront access and sense of place, especially in the central Toronto waterfront area.

Objective 5

Foster cooperation in cost-effective public and private initiatives by reducing jurisdictional gridlock, sharing resources, and coordinating waterfront activities

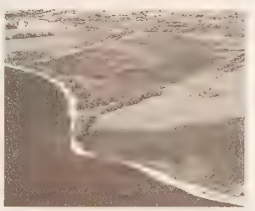
Integrate the application of provincial policies, regulations, and processes, especially by coordinating approval requirements for shoreline projects.

Coordinate the allocation and timing of funding to waterfront projects, including Waterfront Trail, restoration, interpretation and recreation projects.

Assist in resolving jurisdictional or policy conflicts through round-table approaches, partnerships, and mediation.

Standardize and link research and information networks, to support future management and monitoring of progress.

Evaluate the cumulative effects of waterfront changes and assess progress through regular Greenway Report Cards.



IMPLEMENTATION

Most of the mechanisms necessary to implement the Greenway Strategy are already available, and can be described in three categories.

A. Planning/Regulatory

- Municipal planning and environmental assessment
- Legislation affecting use of water's edge and offshore
- Other regulatory instruments
- Watershed strategies and subwatershed plans
- Remedial Action Plans
- Integrated Shoreline Management Plans

B. Stewardship

- Management of public lands
- Land acquisition by public agencies
- Landowner contact

C. Funding and Incentives

- Coordinating plans and projects with funding opportunities
- Directing economic incentives
- Attracting private funds to waterfront projects

Defining Roles for Waterfront Regeneration

Responsibility for implementing the Lake Ontario Greenway Strategy cannot rest with any single agency. Rather, each of the agencies, municipalities, and groups with an interest in the waterfront needs to review its own area of responsibility and actions, to ensure that it is contributing in a positive way to achieving the vision and objectives of the Strategy.

The Waterfront Regeneration Trust will continue its leadership role in bringing agencies and municipalities together to address issues, coordinating funding proposals, reporting on progress and challenges, and promoting appropriate conservation and use of the waterfront.

Federal and provincial agencies, conservation authorities and municipalities will be encouraged to incorporate the Greenway Strategy into their planning, regulatory, and other activities. The academic community will be asked to assist in research and monitoring. First Nations peoples will be encouraged to help raise public awareness about the importance of the waterfront in native history and spirituality. Businesses, industries, community groups and individuals along the Greenway will also continue to have many opportunities for involvement in regeneration activities.

The Lake Ontario Greenway Steering Committee, which represents the range of agencies and groups involved in the Greenway, will continue to meet regularly to exchange information and experiences, discuss priorities, monitor progress, address common issues, and continue the momentum towards waterfront regeneration. Where needed, workshops and special workgroups will be used to address technical issues and to undertake projects.

The challenges of the Lake Ontario Greenway are great, often beyond the ability of any one individual, group or agency. But by working together with a shared vision, there is no doubt that the progress already made to regenerate the waterfront will be sustained and multiplied in the future.

Chapter one

Introduction

Dr. J.D. Murray

Beach and bluffs, west of Port Darlington

Chris Browne, Natale Scott Browne Architects

East Beach, Port Hope

Since aboriginal people first settled on the banks of Lake Ontario, the waterfront has provided generations of people with a place to live, sources of food, means of transportation, drinking water, recreation and more. It is a precious asset, but has suffered over the years from the pressures of use and abuse from human activities along the shoreline and in the watersheds that feed it. This strategy shows how we can regenerate the waterfront to ensure that its values are protected, enhanced and restored.

BACKGROUND

The Lake Ontario Greenway Strategy builds on the foundation established by the Royal Commission on the Future of the Toronto Waterfront, which was headed by the Honourable David Crombie. Between June 1988 and June 1992, the Commission undertook extensive research and analysis, and held public hearings and workshops on a range of issues affecting the waterfront, culminating in the publication of an interim report *Watershed* and a final report *Regeneration*.

The Royal Commission found that Lake Ontario is a significant provincial resource, similar in significance to the Niagara Escarpment, the Oak Ridges Moraine, Georgian Bay and other major natural features. People who came to the hearings described the myriad ways in which they use and enjoy the waterfront. They expressed their deep concerns about environmental degradation, loss of cultural heritage, and inappropriate development patterns. They urged the Commission to find ways to ensure that the waterfront becomes clean, green, accessible, connected, open, useable, diverse, affordable and attractive.

To help implement the recommendations of the Royal Commission, the Ontario Government created the Waterfront Regeneration Trust in June 1992 under Bill 1.

The mandate of the Trust is to:

- facilitate the establishment of a waterfront trail and associated green or open spaces from Burlington Bay to the Trent River;
- coordinate programs and policies of the Government of Ontario and its agencies relating to waterfront lands;
- advise the Province on any matters relating to the use, disposition, conservation, protection and regeneration of waterfront lands;
- serve as a resource centre and information clearinghouse relating to waterfront lands;
- consult with the public to determine the public interest in the environmental integrity of the waterfront lands; and
- do such other things as the Government of Ontario may direct.

Waterfront Principles

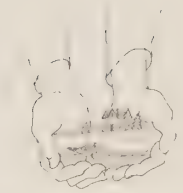
CLEAN: all activities and future development should work with natural processes to contribute to environmental health; air, land, sediments and water should be free of contaminants that impair beneficial uses by all living beings.

CONNECTED: connections throughout the bioregion with the region's natural and cultural heritage (wildlife habitats, city and countryside, social communities, past and present, people and nature) should be restored and maintained. Greenways should connect and incorporate existing public open spaces to form a "linked-nodal" pattern.

GREEN: natural features and topography should form a "green infrastructure" for the bioregion including natural habitats, land-forms, aquifer recharge areas and other open spaces.

OPEN: existing views of Lake Ontario and its bays, bluffs, peninsulas, and islands should be maintained. Views created by the open expanses of water should be treated as important values. Density and design of waterfront structures should not create a visual barrier to the lake.

ACCESSIBLE: waterfront communities should be serviced by roads and public transit. Improvements to access should be made for people to enjoy the waterfront on foot or by bike. The waterfront should be accessible to everyone including the disabled, children, and older adults.



❶ Protect

❷ Restore

❸ Promote understanding and recreational use

❹ Promote compatible economic activity

❺ Co-operate

In coordinating this Lake Ontario Greenway Strategy, the Waterfront Regeneration Trust is fulfilling its mandate as described in Bill 1, and working with waterfront partners to pursue the directions established in *Regeneration*.

GOAL AND OBJECTIVES

The goal of the Lake Ontario Greenway Strategy is to foster commitment to actions that will regenerate a healthy and sustainable waterfront that is clean, green, accessible, connected, open, useable, diverse, affordable and attractive.

These principles are embodied in the five objectives of the Greenway Strategy. Using an ecosystem approach, the Strategy is intended to:

❶ protect the physical, natural and cultural attributes associated with the Lake Ontario Greenway;

❷ identify restoration needs and methods and encourage landowners, communities and agencies to undertake regeneration activities;

❸ promote greater awareness, understanding, access and recreational use of the waterfront and encourage community pride and participation in its regeneration;

❹ promote economic activities and employment on the waterfront that are compatible with the other Greenway objectives; and

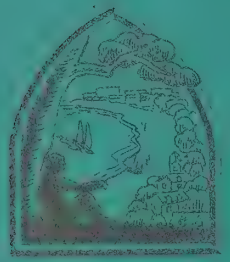
❺ foster cooperation in cost-effective public and private initiatives by reducing jurisdictional gridlock, sharing resources, and coordinating waterfront activities.

The ecosystem approach recognizes that humans are part of ecosystems, and that everything – economic, social and environmental – is connected to everything else. To work towards healthy and sustainable ecosystems, the ways that activities are planned and decisions are made must change. Instead of working with separate disciplines, linkages and integration must be given higher priority. Instead of managing resources piecemeal, regeneration activities must incorporate the full spectrum of protection, enhancement and restoration.

Waterfront Principles

USEABLE: the waterfront should support a mix of public and private uses. Uses should be primarily water-related; permit public access and use; provide a balance of ecological, recreational, employment and residential opportunities; be environmentally friendly; and promote year-round use.

AFFORDABLE: waterfront development and management should be undertaken in ways that provide opportunities for economic renewal and for efficient use of limited government and private-sector resources. Waterfront recreational opportunities should be affordable to people with a range of income levels.



DIVERSE: the waterfront should include diverse landscapes, places, wildlife habitats, uses, programs, and experiences that offer varied opportunities. The mix of land uses and facilities should balance public and private; urban and rural; regional and local; residential and recreational; industrial and commercial; built and natural; large- and small-scale; active and passive; busy and quiet; and free and user-pay.

ATTRACTIVE: design and landscaping should protect, enhance, and create distinctive and memorable places. Design on the waterfront should protect vistas and views of the lake; provide a sense of continuity with the past; emphasize sensitive placement and design of buildings; consider relationships between buildings, open spaces, and the lake; use harmonious colours, textures and materials; and include a wide range of landscape types (e.g., wildlife habitats, parklands, gardens, promenades, courtyards, waterscapes, play areas).

ECOSYSTEM APPROACH

The shift from traditional to ecosystem-based decision-making

The Greenway Strategy shows how the ecosystem approach can be applied to a specific geographical area – the north shore of Lake Ontario, in the context of the watersheds that drain to the lake.

THE GREENWAY

The Lake Ontario Greenway encompasses the lands and waters that show a direct ecological, cultural or economic connection to the waterfront from Burlington Bay to the Trent River (see Map 3). It extends into the lake, generally to the ten metre depth within which most of the nearshore coastal processes and fishery activities occur. Inland, the Greenway generally extends to the first significant rise in elevation, which often corresponds to the former Lake Iroquois shoreline. Where significant natural areas extend up major river valleys, they are usually included.

The greenway concept is gaining increasing popularity in Canada and the United States as a means to integrate environmental regeneration and recreation opportunities into the urban and rural fabric. Greenways can:

Ecosystem approach

- protect and link habitats,
- enhance environmental quality,
- provide recreation activities close to home,
- create more liveable and healthy communities, and
- enhance business and tourism opportunities.

This Greenway Strategy for the Lake Ontario waterfront shows how these benefits can be realized through stewardship, restoration, and careful planning. The Waterfront Trail forms the backbone of

the Greenway, in a setting that includes protected natural areas, cultural heritage, appropriate waterfront development, and compatible commercial ventures. Thus, the Lake Ontario Greenway encompasses all the components of the ecosystem in which we live – the social and economic aspects as well as the environmental ones.

CONTEXT

The Lake Ontario Greenway Strategy is occurring in the context of a number of related and complementary initiatives. For example, the reform of the Ontario Planning Act is providing a land use planning framework that is supportive of many of the objectives of the Greenway Strategy (see Chapter Four). Strategic planning initiatives for the Oak Ridges Moraine and the Greater Toronto Area are intended to direct urban growth so that environmental values are sustained. Land use change on the Niagara Escarpment has been guided by the Niagara Escarpment Plan since 1985.

Hamilton-Wentworth Region's *Vision 2020* is a comprehensive statement of community goals for the next two decades that is now being implemented. A strategy is underway along the Trent-Severn Waterway to enhance culture, tourism, recreation and economic activities while protecting environmental quality.

Since 1972, the Great Lakes Water Quality Agreement and the Canada-Ontario Agreement have provided a framework for programs to restore the health of the Great Lakes by the United States and Canadian governments, as well as the province of Ontario and municipalities.

Recent and ongoing planning initiatives and policy development by many regional and local municipalities along the Lake Ontario shoreline demonstrate increased commitments to waterfront access and regeneration.

The Waterfront Trail contributes to a network of existing and emerging greenways and inter-regional trails, including the Bruce Trail on the Niagara Escarpment, a number of river valley trails (e.g., Credit, Ganaraska), greenways in Hamilton-Wentworth and Niagara regions, Eastern Ontario trails, the Loyalist Parkway in Prince Edward County, and the Seaway Trail on the south side of Lake Ontario.

Suzanne Barrett, Waterfront Regeneration

The Martin Goodman Trail, Cherry Beach area, Toronto


Ganaraska Trail
Ganaraska Trail
Hastings Heritage Trail
Rideau Trail
1000 Islands Parkway
Seaway Trail
Oak Ridges Moraine Trail
BELLEVILLE
KINGSTON
TRENTON
Loyalist Parkway
WATERTOWN
Waterfront Trail
COBOURG
Elora Cataract Trail
Caledon Rail Trail
OSHAWA
SANDY CREEK
Credit Valley Trail
Lake Ontario
Bruce Trail
TORONTO
OSWEGO
ROCHESTER
Niagara River Recreational Trail
Seaway Trail
HAMILTON
ST CATHERINES
LOCKPORT
Hamilton to Brantford Rail Trail
Grand Valley Trail
Welland Canal Parkway
Shoreline Trail
BUFFALO
MAP 1
INTER-REGIONAL TRAIL NETWORK
Inter-regional Trails
Regional/County Boundary
Proposed Trails
Oak Riages Moraine
Niagara Escarpment
0 10 20 30 40 50 km

PROCESS

The Lake Ontario Greenway Strategy is directed by a steering committee composed of representatives of the federal, provincial, regional and local governments, conservation authorities, and non-government groups, and chaired by Commissioner David Crombie. Six workgroups undertook extensive research and analysis and made recommendations to the steering committee. Appendix B lists the steering committee and workgroup participants.

The public was consulted by the Waterfront Regeneration Trust at public hearings in November 1992 and on an ongoing basis in workshops and meetings with interested groups. In addition, valuable public input on many matters related to the Strategy was received by waterfront municipalities and conservation authorities in the course of their planning and strategic activities.

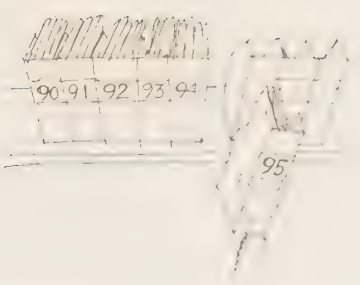
These public and agency consultations, as well as the experience gained in implementing the Waterfront Trail and other projects, reinforced the basic thrusts of the Royal Commission on the Future of the Toronto Waterfront – the need to apply an ecosystem approach to address the overlapping circles of environment, economy and community; and the need to coordinate the actions of many existing agencies rather than impose solutions from above.

PURPOSES OF THE STRATEGY

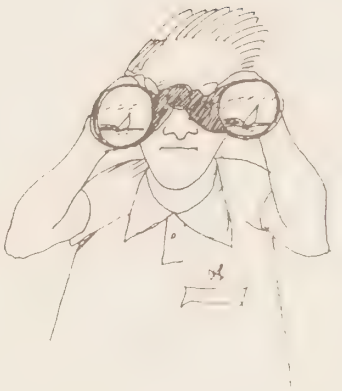
This report was prepared by the Waterfront Regeneration Trust on behalf of the steering committee. It is a summary of work in progress, a record of steps being taken today to realize a shared vision of tomorrow's waterfront, and a guide for the choices to keep moving in the right direction.

A great deal of progress has been made since the Royal Commission began its work in 1988 – progress in implementing specific projects; significant improvements in provincial and municipal policies; and, not least, a striking change in the way communities view their waterfront. Almost universally, the waterfront is now recognized as an environmental, community, and economic resource of great value – a resource to be carefully protected, and to be restored to its full potential where necessary.

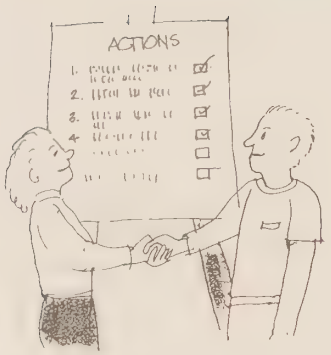
In a variety of ways, all levels of government have already demonstrated significant commitments to the Lake Ontario Greenway. Federal programs under the Great Lakes Water Quality Agreement, the Canada Ontario Agreement, and the Great Lakes Cleanup Fund are contributing to the regeneration of Lake Ontario. The Province's commitment is amply demonstrated by the passage of legislation establishing the Waterfront Regeneration Trust, by adoption of the Royal Commission's nine principles and ecosystem approach, and by allocation of funding to the Waterfront Trail and other projects. The commitment of municipalities, conservation authorities,



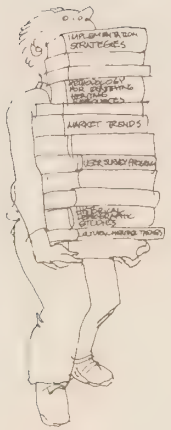
Report on progress



Confirm the vision



Establish a blueprint



Outline the tools

and community groups is also evident – a commitment measured in time and energy, in plans for the future, in projects, and in dollars.

Within this context, the Greenway Strategy is a signpost along the way. It reports on the progress that has been made to date and establishes a consensus-based blueprint for further actions. It is not intended to be a formal statement of government policy, but rather to provide a context for setting priorities, guidance on ways to achieve a shared vision, and an information base to assist decision-making.

The Strategy may be used by different agencies and groups in a variety of ways. For example, federal and provincial agencies may use the Strategy in establishing funding criteria for programs and priorities for research and other activities. The Strategy can be used by conservation authorities to guide watershed and shoreline stewardship. Regional and local municipalities may use it in developing their plans, policies and projects, and in reviewing the effects of proposed developments on the waterfront. The Strategy can also provide information and guidance to assist non-government groups with their projects.

In summary, the Strategy is intended to assist the many waterfront partners to act in a cooperative, efficient and focussed manner, so that the progress made to date will continue to grow and be sustained.

GUIDE TO THE REPORT

Following this Introduction, Chapter Two describes The Waterfront of Today – its values, resources, issues and opportunities. Chapter Three, The Waterfront of the Future, highlights some of the considerable progress that has already been made, and outlines the steps that must be taken to accomplish our shared vision of a regenerated waterfront. Chapter Four, Implementation, summarizes the many existing and emerging tools available to implement the Strategy, and outlines the potential roles of key agencies and groups.

A separate report titled *Lake Ontario Greenway Strategy: Next Steps* provides a more detailed assessment of the landscape units along the north shore of Lake Ontario. For each unit, there is a description of the landscape character, a summary of the patterns of change and associated issues, a statement of regeneration goals, and a listing of short-term opportunities and actions.

Chapter two

The Waterfront of Today

Lynde Creek Marsh, Whitby

The Lake Ontario waterfront that we see today is the combined result of powerful natural and cultural forces, which continue to shape its future. Neither land nor lake is static – constant change is a vital part of this ecosystem, whether expressed over days, or seasons, or centuries.

Over the past two centuries, the pace and rhythm of that change has been influenced by human actions along the lakeshore – cutting trees, hardening the shore, removing fish and adding wastes to the lake waters. Increasingly, the dominant force within the North Shore ecosystem has become a single species – humankind – using a greater and greater share of the energy and resources of the ecosystem to support its burgeoning population.

Yet every storm that washes away a seawall, every dandelion that pushes through a crack in a sidewalk, is a reminder that natural forces retain their power. If we are to create a future waterfront that provides a safe and pleasant habitat for ourselves, along with a sustainable habitat for a diverse array of other species, we must learn to shape those actions we can control in harmony with the natural forces that we cannot alter.

To begin, we must understand the nature of today's waterfront, and the forces that have shaped it.

Powerful natural and cultural forces shape the waterfront

THE GREAT LAKES AND BIOREGIONAL CONTEXTS

Lake Ontario is the fifth and lowest in elevation of the Great Lakes, a location that influences its character enormously (see Figure 1). The watershed area draining directly into Lake Ontario, for example, is relatively small – only about three times the surface area of the lake itself. But the volume of water entering the lake through the Niagara River from the other Great Lakes is very large, some 80% of the total flow into Lake Ontario. As a result, despite the 244 metre depth of Lake Ontario, it takes water an average of only six years to reach the St. Lawrence River.

The Great Lakes have other profound effects as well. Their capacity to trap and slowly release heat significantly modifies the climate of the surrounding region, making this part of the continent cooler in summer and milder in winter than other areas at a similar latitude. This moderating effect is especially pronounced close to the water's edge. Another climatic effect is the tendency of areas downwind from the lakes to receive significantly larger winter snowfalls than elsewhere in Ontario.

Partly as a result of these climatic effects, the north shore of Lake Ontario acts as the northern edge of a broad vegetation zone known as Carolinian forest. Remnants of these forests of oak, hickory, and other hardwoods are well-expressed near the western end of the Greenway, gradually being replaced by more hardy mixed forests to the north and east. As well as permitting the survival of southern plant life and associated birds and other wildlife, the mild winters along the Lake Ontario shore often mean open waters and snow-free fields that support many types of wintering birds.

The Great Lakes have also strongly influenced human settlement patterns in this region (see Figure 2). The almost universal human tendency to settle near the shore probably began with native travel routes and seasonal fishing patterns, extended into the location of the first trading posts and military bases, and was reinforced by early industrial activities which used water for transportation and

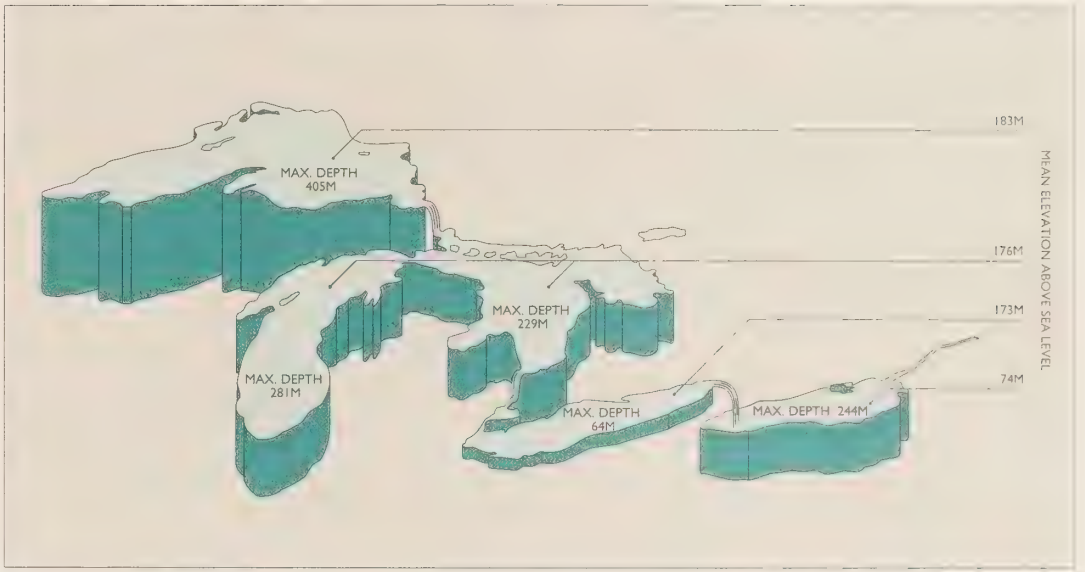


Figure 1
The Great Lakes
Source: Canada, Environment Canada. 1987. *The Great Lakes*

Figure 2
Great Lakes Basin population density
Source: adapted from Canada,
Environment Canada. 1987.
The Great Lakes

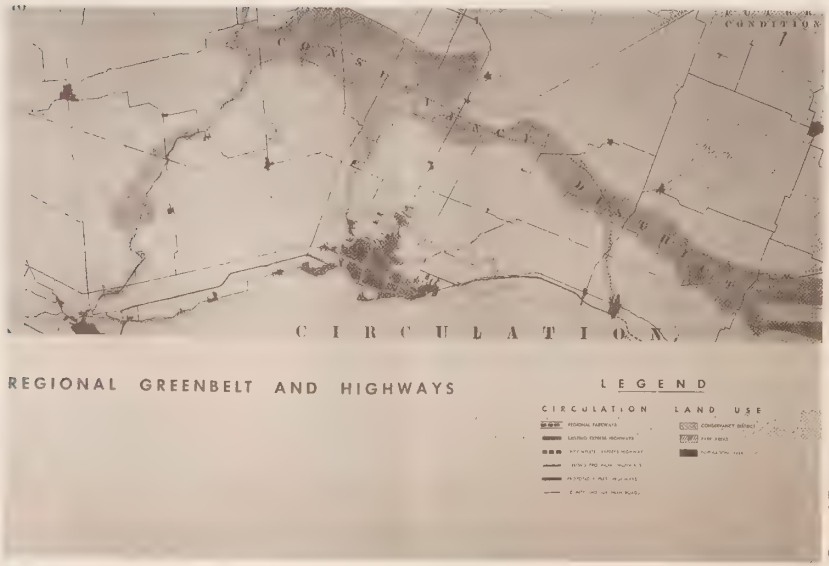
for mills. The role of the Great Lakes region as an industrial heartland was further strengthened by the development of the St. Lawrence Seaway system, and the electrical generating stations which used Great Lakes water for cooling or to spin turbines. Even when rail, roads and eventually airports supplanted the role of the lakes in transporting goods, their location conformed largely to the lakeside pattern already established.

The north shore of Lake Ontario must also be viewed in the context of its bioregion – a wedge-shaped area bounded by the Niagara Escarpment, the Oak Ridges Moraine, and the Lake. This area, known as the Greater Toronto Bioregion, encompasses a gently sloping plain tilted southwards to the lake. Of the 35 major watercourses draining into the Greenway, 4 have their sources within or just above the Escarpment area; another 16 have their headwaters in the Oak Ridges Moraine; and the remaining 15 smaller streams draw much of their base flow from sandy deposits associated with the former Lake Iroquois shoreline.

Three centuries ago, almost all of the Bioregion was clad in lofty forests of maple and beech, oak and pine. By the mid-1800s, most of the original forest was gone, with the Bioregion converted into one of the most productive farming areas in the country. Over the past century, especially the last 30 years, the growth of Canada's largest urban concentration has spread over a significant portion of the Bioregion, and greatly altered the remaining rural areas.

Greater Toronto Bioregion

Concern about environmental deterioration within the Bioregion is not just a recent phenomenon. Even as early as 1860, the once-abundant Atlantic salmon were gone from Lake Ontario, removing an important food source. By the 1940s, widespread erosion in the sandy hills of the Oak Ridges Moraine prompted the acquisition of large areas by county governments and conservation authorities for tree planting. The Ganaraska Forest is one result of these initiatives. Other early planning efforts recognized the importance of the Moraine to the City of Toronto, as shown on a 1943 map produced by the Toronto City Planning Board (see Figure 3).

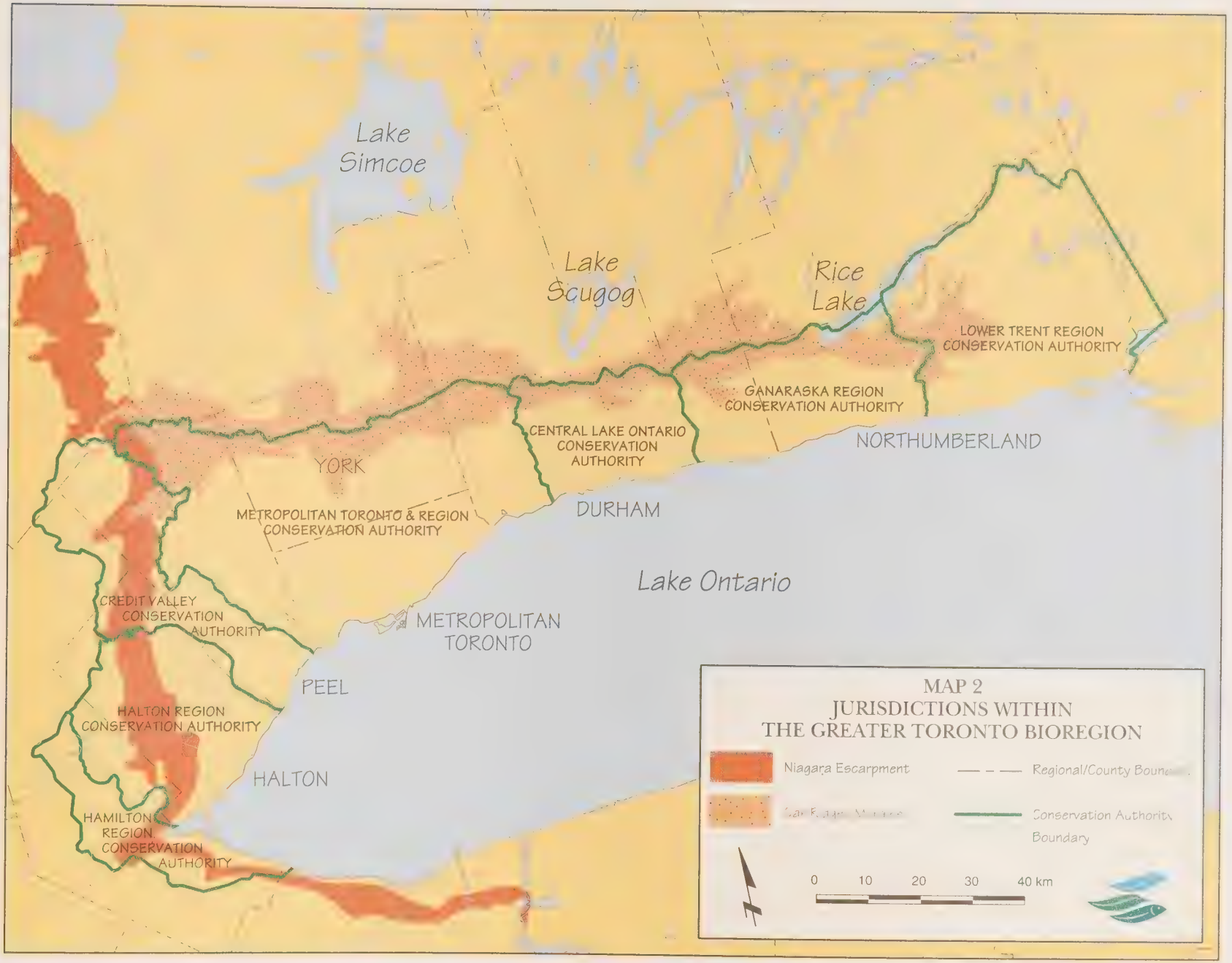


City of Toronto Archives

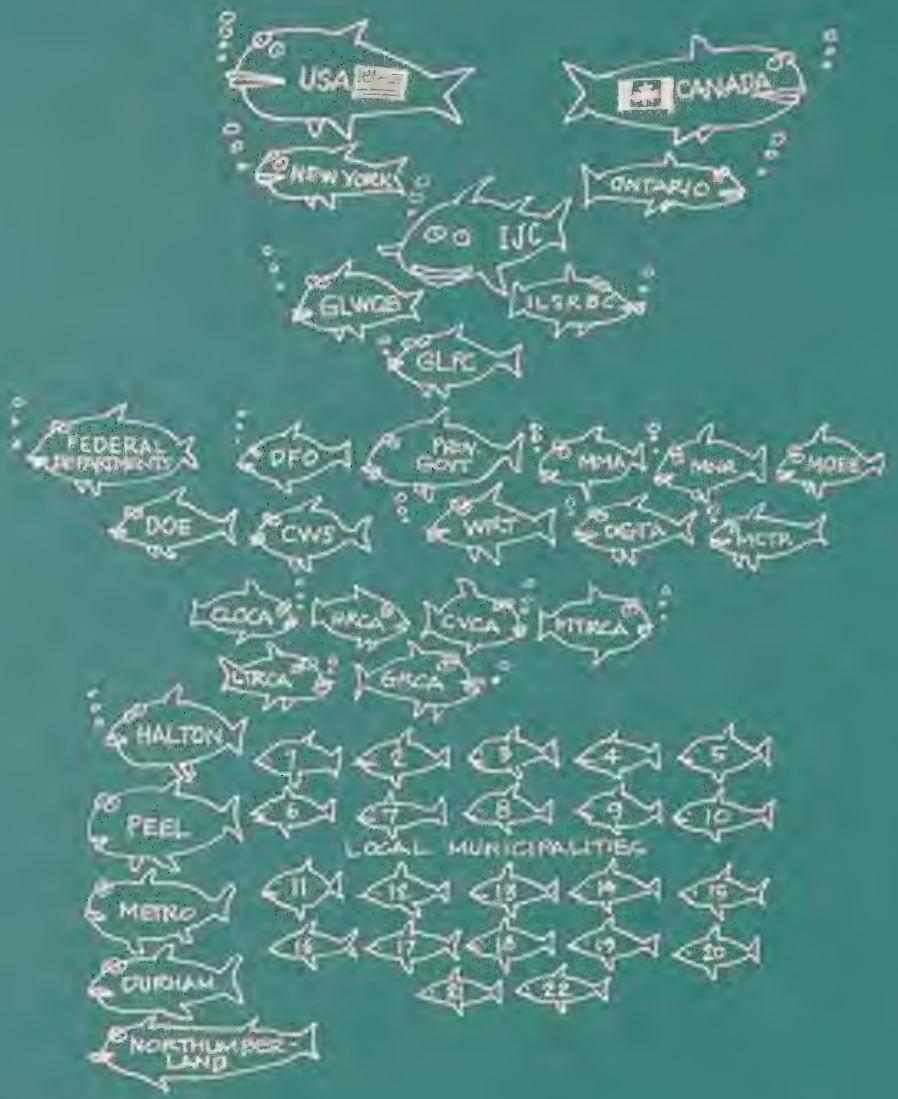
Figure 3
1943 Regional Greenbelt

Together with the biological and cultural context, a complex institutional context has evolved within the Bioregion. Along the shoreline from Burlington to Trenton, 22 local municipalities deliver municipal services and administer the planning system. In the western and central sections of the Greenway, broader-scale functions are provided by the Regional Municipalities of Halton, Peel, York and Durham, and by Metro Toronto. The provincial Office for the Greater Toronto Area plays a coordinating role in these five regions. To the east, the County of Northumberland administers roads, waste management, tourism promotion and other functions, but does not currently have formal planning responsibilities.

Six conservation authorities provide watershed and resource management functions within the Bioregion, together with several provincial ministries. Responsibility for waterfront matters at the provincial level involves primarily the Ministry of Municipal Affairs, Ministry of Natural Resources, Ministry of Environment and Energy, and the Ministry of Culture, Tourism and Recreation, although many others have specific areas of responsibility. The Waterfront Regeneration Trust, a relatively new agency, has a mandate to provide advice and coordination of waterfront policies and programs.


Lake Simcoe
Lake Scugog
Rice Lake
LOWER TRENT REGION CONSERVATION AUTHORITY
GANARASKA REGION CONSERVATION AUTHORITY
CENTRAL LAKE ONTARIO CONSERVATION AUTHORITY
NORTHUMBERLAND
YORK
METROPOLITAN TORONTO & REGION CONSERVATION AUTHORITY
DURHAM
Lake Ontario
CREDIT VALLEY CONSERVATION AUTHORITY
METROPOLITAN TORONTO
PEEL
HALTON REGION CONSERVATION AUTHORITY
HALTON
HAMILTON REGION CONSERVATION AUTHORITY
MAP 2
JURISDICTIONS WITHIN
THE GREATER TORONTO BIOREGION
Niagara Escarpment
Regional/County Boundary
Conservation Authority Boundary
0 10 20 30 40 km

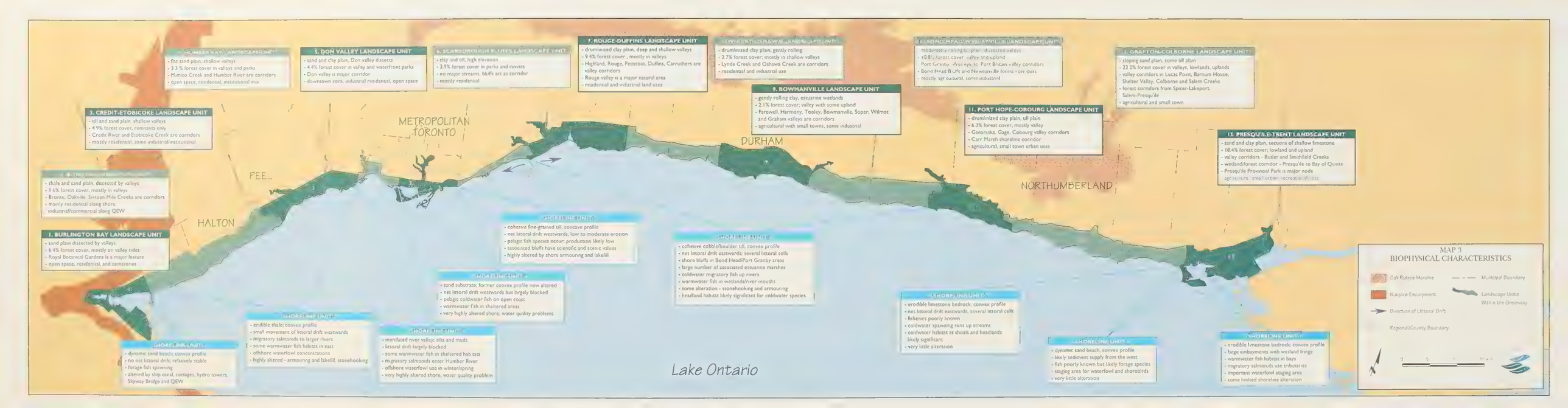
INSTITUTIONAL CONTEXT



There is also a federal presence along the waterfront, particularly related to ports and harbours, water quality, and fisheries. The primary federal departments involved are Transport Canada, Fisheries and Oceans Canada, Environment Canada, and Canadian Heritage. Lake Ontario fisheries management also involves cooperative efforts between the Province and New York State, and the participation of an international body, the Great Lakes Fishery Commission. Another long-standing institution for Great Lakes issues is the International Joint Commission (IJC), which makes recommendations on such topics as water quality and water levels regulation. Subsidiary agencies such as the Great Lakes Water Quality Board, the Science Advisory Board, and the International St. Lawrence River Board of Control advise the IJC on specific matters.

THE PHYSICAL ENVIRONMENT

Lake Ontario sits in a cup-like depression in the underlying bedrock of limestone and shale, relatively young and soft rocks which are exposed in a few locations along the shore. Along most of the shoreline, however, the rock has been covered with a mantle of tills and sands from at least four glaciers that have ploughed their way southwards over the past 100,000 years. Some of the best geological records in Canada of the history of those glaciations are found along the waterfront, particularly at Scarborough Bluffs and the Don Valley Brickyard.


HUMBER BAY LANDSCAPE UNIT
- flat sand plain, shallow valleys
- 3.3 % forest cover in valleys and parks
- Mimico Creek and Humber River are corridors
- open space, residential, institutional mix
5. DON VALLEY LANDSCAPE UNIT
- sand and clay plain, Don valley dissects
- 4.4% forest cover in valley and waterfront parks
- Don valley is major corridor
- downtown core, industrial residential, open space
6. SCARBOROUGH BLUFFS LANDSCAPE UNIT
- clay and till, high elevation
- 3.9% forest cover in parks and ravines
- no major streams, bluffs act as corridor
- mostly residential
7. ROUGE-DUFFINS LANDSCAPE UNIT
- drumlinized clay plain, deep and shallow valleys
- 9.4% forest cover , mostly in valleys
- Highland, Rouge, Petticoat, Duffins, Carruthers are valley corridors
- Rouge valley is a major natural area
- residential and industrial land uses
8. WHITBY-OSHAWA WETLANDS LANDSCAPE UNIT
- drumlinized clay plain, gently rolling
- 2.7% forest cover; mostly in shallow valleys
- Lynde Creek and Oshawa Creek are corridors
- residential and industrial use
9. BOWMANVILLE LANDSCAPE UNIT
- gently rolling clay, estuarine wetlands
- 2.1% forest cover; valley with some upland
- Farewell, Harmony, Tooley, Bowmanville, Soper, Wilmot and Graham valleys are corridors
- agricultural with small towns, some industrial
10. BOND HEAD-WESLEYVILLE LANDSCAPE UNIT
- moderately rolling to plain - dissected valleys
- 10.8% forest cover - valley and upland
Port Granby - Westeys Ic Port Britain valley corridors
- Bond Head Bluffs and Newtonville forest corridors
- mostly agricultural, some industrial
11. PORT HOPE-COBOURG LANDSCAPE UNIT
- drumlinized clay plain, till plain
- 6.3% forest cover, mostly valley
- Ganaraska, Gage, Cobourg valley corridors
- Carr Marsh shoreline corridor
- agricultural, small town urban uses
12. GRAFTON-COLBORNE LANDSCAPE UNIT
- sloping sand plain, some till plain
- 23.2% forest cover in valleys, lowlands, uplands
- valley corridors in Lucas Point, Barnum House, Shelter Valley, Colborne and Salem Creeks
- forest corridors from Spicer-Lakeport, Salem-Presqu'ile
- agricultural and small town
13. PRESQU'ILE-TRENT LANDSCAPE UNIT
- sand and clay plain, sections of shallow limestone
- 18.4% forest cover; lowland and upland
- valley corridors - Butler and Smithfield Creeks
- wetland/forest corridor - Presqu'ile to Bay of Quinte
- Presqu'ile Provincial Park is major node
agricultural, small urban, recreational uses
3. CREDIT-ETOBICOKE LANDSCAPE UNIT
- till and sand plain, shallow valleys
- 4.9% forest cover, remnants only
- Credit River and Etobicoke Creek are corridors
- mostly residential, some industrial/institutional
- shale and sand plain, dissected by valleys
- 16% forest cover, mostly in valleys
- Bronte, Oakville, Sixteen Mile Creeks are corridors
- mainly residential along shore, industrial/commercial along QEW
1. BURLINGTON BAY LANDSCAPE UNIT
- sand plain dissected by valleys
- 6.4% forest cover, mostly on valley sides
- Royal Botanical Gardens is a major feature
- open space, residential, and cemeteries
METROPOLITAN TORONTO
DURHAM
NORTHUMBERLAND
HALTON
PEE...
SHORELINE UNIT 1
- cohesive fine-grained till, concave profile
- net littoral drift westwards, low to moderate erosion
- pelagic fish species occur; production likely low
- associated bluffs have scientific and scenic values
- highly altered by shore armouring and lakefill
SHORELINE UNIT 2
- cohesive cobble/boulder till, convex profile
- net littoral drift eastwards; several littoral cells
- shore bluffs in Bond Head/Port Granby areas
- large number of associated estuarine marshes
- coldwater migratory fish up rivers
- warmwater fish in wetlands/river mouths
- some alteration - stonehooking and armouring
- headland habitat likely significant for coldwater species
SHORELINE UNIT 3
- sand substrate; former convex profile now altered
- net littoral drift westwards but largely blocked
- pelagic coldwater fish on open coast
- warmwater fish in sheltered areas
- very highly altered shore, water quality problems
SHORELINE UNIT 4
- dynamic sand beach; convex profile
- no net littoral drift; relatively stable
- forage fish spawning
- altered by ship canal, cottages, hydro towers, Skyway Bridge and QEW
SHORELINE UNIT 5
- erodible shale; convex profile
- small movement of littoral drift westwards
- migratory salmonids to larger rivers
- some warmwater fish habitat in east
- offshore waterfowl concentrations
- highly altered - armouring and lakefill, stonehooking
SHORELINE UNIT 6
- inundated river valley; silts and muds
- littoral drift largely blocked
- some warmwater fish in sheltered hab tats
- migratory salmonids enter Humber River
- offshore waterfowl use in winter/spring
- very highly altered shore, water quality problem
SHORELINE UNIT 7
- erodible limestone bedrock; convex profile
- net littoral drift eastwards, several littoral cells
- fisheries poorly known
- coldwater spawning runs up streams
- coldwater habitat at shoals and headlands likely significant
- very little alteration
SHORELINE UNIT 8
- dynamic sand beach, convex profile
- likely sediment supply from the west
- fish poorly known but likely forage species
- staging area for waterfowl and shorebirds
- very little alteration
SHORELINE UNIT 9
- erodible limestone bedrock; convex profile
- large embayments with wetland fringe
- warmwater fish habitat in bays
- migratory salmonids use tributaries
- important waterfowl staging area
- some limited shoreline alteration
Lake Ontario
MAP 3
BIOPHYSICAL CHARACTERISTICS
Oak Ridges Moraine
Niagara Escarpment
Direction of Littoral Drift
Regional/County Boundary
Municipal Boundary
Landscape Units Within the Greenway
0
5
1
1.5

As the most recent glacier melted away, only some 12,500 years ago, it left behind a range of landforms created by both the scraping actions of the ice and the sorting of sediments by the melt-waters. These landforms have shaped human uses of the landscape to a large degree – the flat, rich clay plains of Halton, for example, were almost entirely cleared for farmland, while the steep-sided drumlins of Northumberland have kept much more of their native forest. Map 3 provides a brief overview of differences in present-day landforms and land uses along the waterfront.

These glacial landforms also form much of the bed of Lake Ontario, but the area along the shoreline has been considerably modified by the lake. The scouring action of the waves moves and sorts the finer sediments, often cleaning off bedrock, creating bluffs along the shore, and depositing sands into beach areas. This unending process can be seen not only along today's lakeshore, but also along abandoned shorelines from periods when the lake was higher than today.

The most prominent of these remnants is the Lake Iroquois shoreline, created about 12,500 years ago, which runs parallel to the current north shore a few kilometres inland (see Map 6). In many areas, this shoreline shows as a prominent wooded bluff, with relatively smooth beach deposits along the base. Transportation planners have made use of these old beaches – both the QEW through Halton and much of Highway 401 from Cobourg to Trenton follow the base of the Lake Iroquois shoreline.

Other lake levels produced their own shoreline remnants, although not as prominent. A good example of abandoned beaches from the glacial Lake Belleville stage, about 12,000 years ago, is found just south-west of Colborne. For most of the next 3,000 years, water levels were lower than current Lake Ontario, so many former shorelines exist underwater. For the past 3,500 years, lake levels on average have been relatively stable, but water levels still fluctuate considerably on a shorter term.

As the last in the chain of Great Lakes, the amount of water flowing into Lake Ontario, and hence the water levels, are greatly influenced by precipitation throughout the entire Great Lakes basin. Power dams both upstream and downstream of Lake Ontario can modify these natural fluctuations by only a very small amount, and a recent report by the International Joint Commission concluded that further stabilization of lake levels is neither practical nor desirable. Future management of the shoreline will have to be designed to take into account an irregular and unpredictable cycle of water levels that ranges over 2 metres over the course of decades, as well as normal seasonal fluctuations of up to 0.5 metres.

Landscape Units

In order to integrate the various elements of the Lake Ontario Greenway and provide a basis for suggesting more detailed actions for specific places, landscape units have been defined (see Map 3). They represent segments of the Greenway that display homogeneous or recurring patterns of the following elements:

- **shoreline characteristics based on substrate type and coastal processes (many of the shoreline units contain several landscape units),**
- **landform, especially valleys, bays, hills and the Lake Iroquois shoreline,**
- **vegetation, especially tree cover,**
- **cultural landscapes, and/or**
- **major land use patterns.**

The characteristics of each landscape unit are described in more detail in the companion document *Lake Ontario Greenway Strategy: Next Steps*.

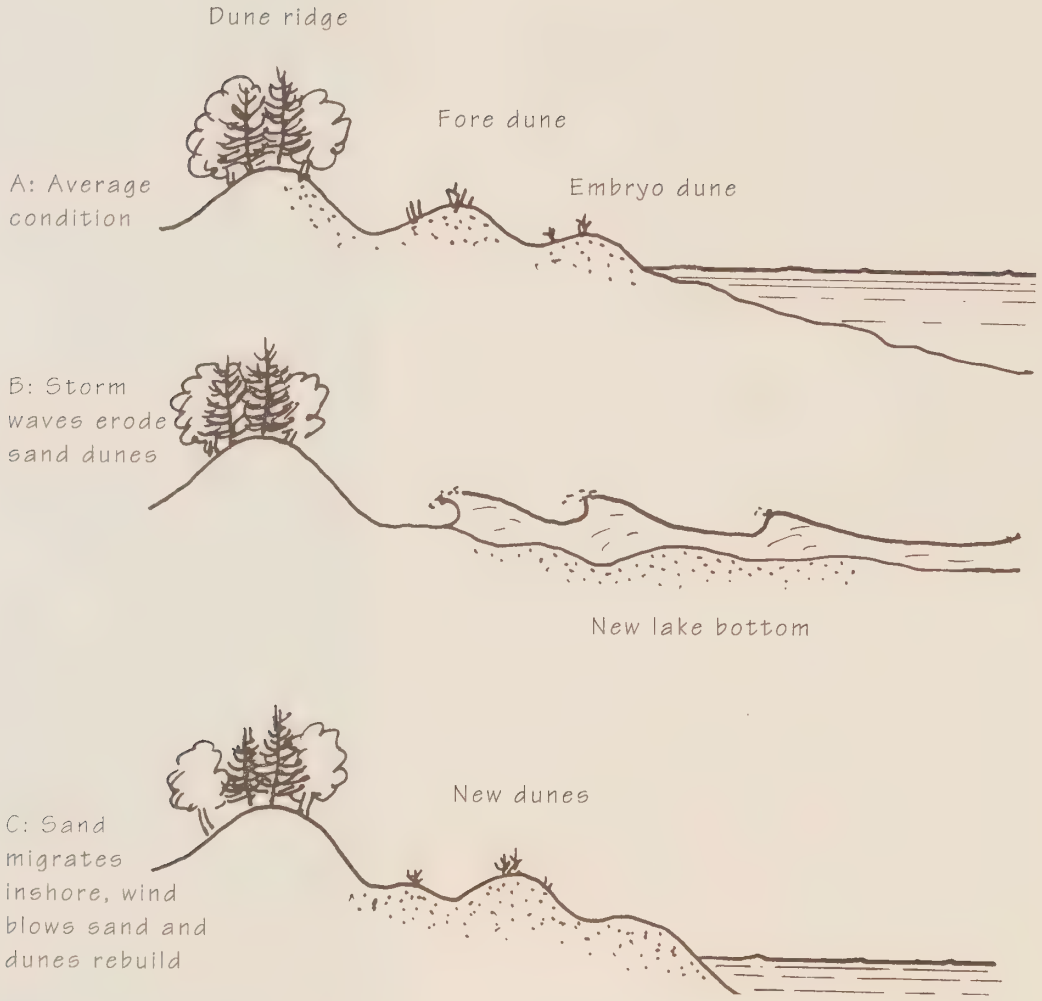


Figure 4
Sandy dynamic beach process

Future climate changes related to global warming may affect lake levels. While it is difficult to predict the nature or magnitude of changes to the current pattern of water level fluctuations at this point, research and modelling studies in the climate change field should be monitored so that effects on Lake Ontario can be addressed appropriately.

SHORELINE PROCESSES

As outlined in the *Shoreline Management Workgroup Report* in the toolkit, the processes that created and maintain the shoreline we see today are complex and dynamic.

The primary driving force for long term shoreline change in this part of Lake Ontario is wave action cutting downwards into the lakebed, which in turn causes bluff erosion and slumping along the shore. The effects of wave action in altering shoreline features are most apparent during storms in periods of high water levels.

A critical factor in determining the rate of shoreline erosion is the controlling substrate, that is, the material that makes up the main body of the lakebed near the shore. As shown on Map 3, nine shoreline units have been defined on the basis of different controlling substrates. While the nature of this substrate may be masked along the water's edge by local deposits of sand or cobble, or by shoreline armouring, it provides a basis for understanding the broad effects of shoreline processes.

Three of the four main types of controlling substrate along the Lake Ontario shore are subject to irreversible erosion (i.e. once material is removed, it cannot be replaced):

- Erodible bedrock, including both shales and limestone, which erode in a similar manner to cohesive shores;
- Cohesive cobble/boulder tills (composed of glacial materials), which often form a pattern of headlands and bays;
- Fine-grained sediments, along the Scarborough Bluffs section only.

The rate of shoreline erosion varies from 0.1 to 0.75 metres/year over a long-term average (although there is considerable variation), which is relatively low compared to some Great Lakes shores. In general, shoreline units with a bedrock substrate erode more slowly; the fine-grained tills of the Scarborough Bluffs show the highest erosion rates.

The only controlling substrate type which can have reversible erosion is dynamic beaches; examples of sandy dynamic beaches are found at Burlington Beach and Presqu'ile. These areas have very deep sand deposits, which can grow or shrink depending on the long-term supply of sediments provided by the adjacent shoreline. As well, these beaches and associated onshore dunes can erode quickly during high-water storm events, with sand temporarily deposited in offshore bars. Over time, this sand will be returned to the beach and dune system. (See Figure 4) Toronto Islands, the

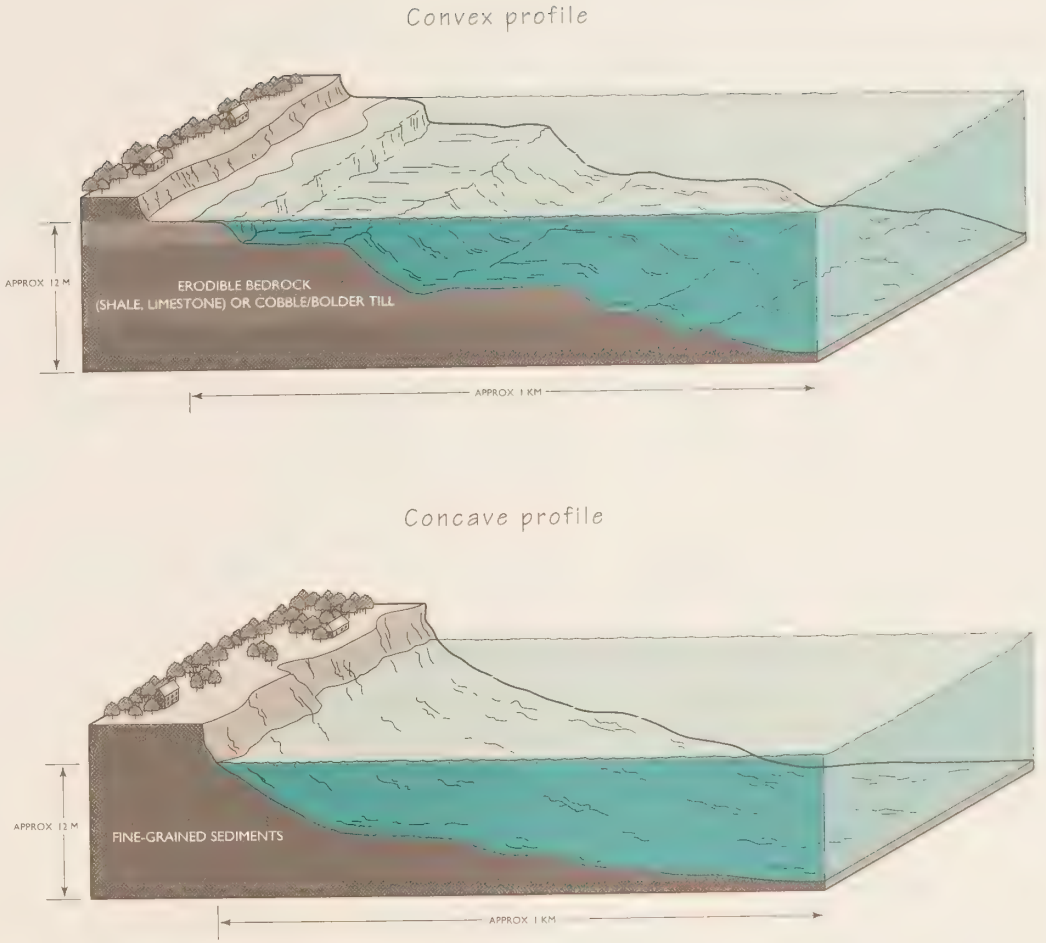
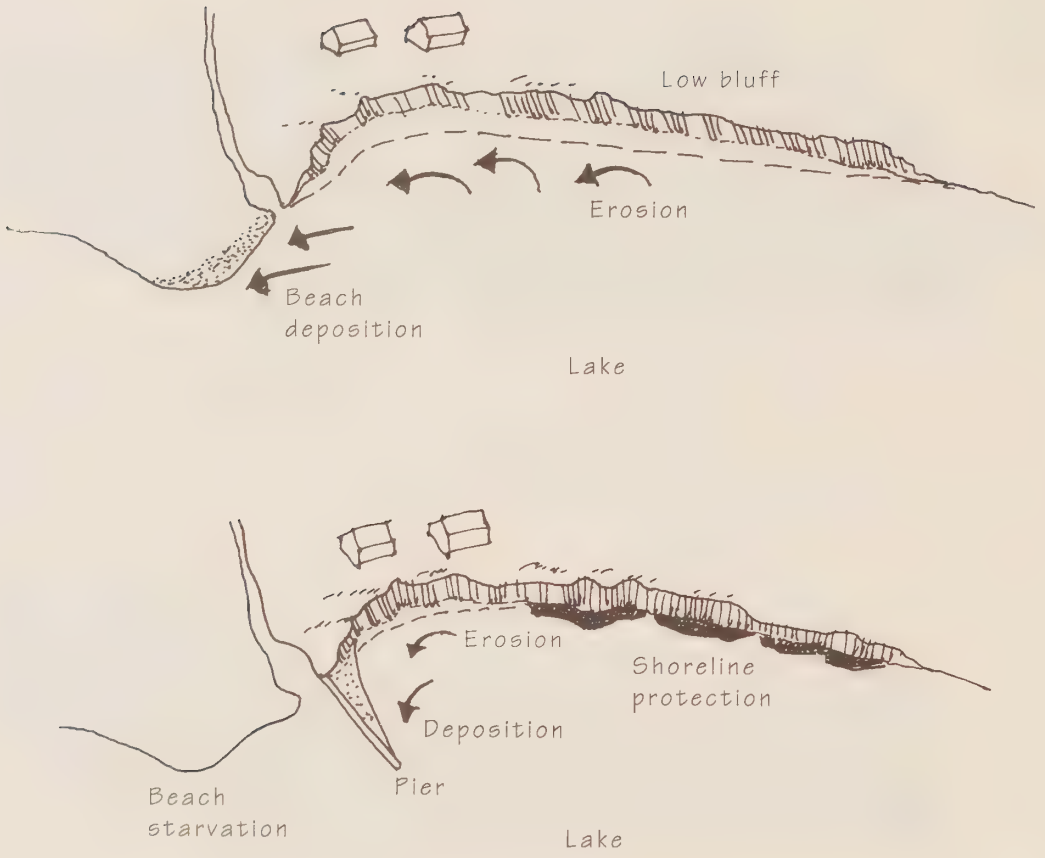


Figure 5
Shoreline Profiles



Impact of shoreline modification on natural shore processes

Eastern Beaches and the Western Beaches were originally formed as dynamic beach deposits, but have been so modified that they no longer function as they once did, largely because of interruptions to the alongshore transport of sand.

Another important factor in shoreline process is the type of shoreline profile (see Figure 5). Most of the shoreline units – those with erodible bedrock or cohesive cobble/boulder controlling substrates – have a convex profile with a nearshore shelf. This shelf helps to protect the shoreline from erosion during moderate and low water levels, and often permits the development of extensive shallow beaches of cobble or sand along the shore. One unit, Scarborough Bluffs, has a steeply sloping concave profile, which provides little protection from wave attack and provides limited beach development.

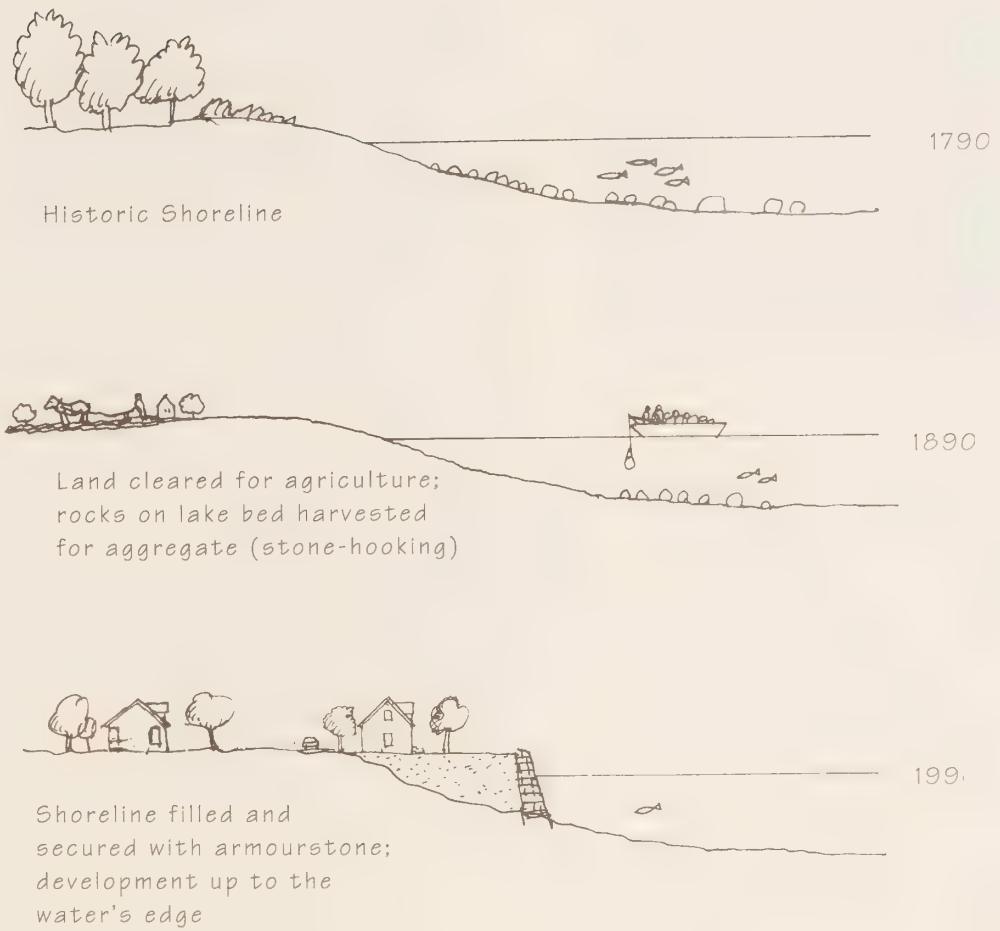
In the shallow waters where wave action is greatest, sediments are transported along the shore in a direction dictated by the angle of the waves. Along the north shore of Lake Ontario, the net transport is westwards from East Point in Scarborough to Burlington; from East Point to Presqu'ile, net transport is eastwards. This alongshore transport is easily interrupted by piers, groynes or lakefills extending into the lake, so that it operates within a series of relatively small littoral cells, and in some shoreline units has been almost completely disrupted. Alongshore transport is particularly important adjacent to beach areas.

The nature of the onshore (i.e. the land just inland from the shore) can have an important modifying influence on shoreline processes:

- a consistently higher onshore creates continuous high or low bluffs, while areas of lower shoreline elevation often create wetlands separated from the lake by a barrier beach (such as Frenchman's Bay and Oshawa Second Marsh);
- shale substrate and onshores along the Halton waterfront have created shingle (flat stone) beaches along the shore, while the gravelly tills along the Northumberland coast create sand and cobble (rounded stone) beaches instead;
- eroding bluffs with a high boulder content can "pave" the shoreline and nearshore lakebed (i.e. create a surface layer of fallen boulders on the lakebed), partially protecting headlands and slowing erosion, as occurs along much of the Durham shore;
- river mouths can modify local processes by adding fine sediments; the Humber Bay shoreline unit is a former river valley flooded by the lake and partly filled with sediments.

Most of the waterfront from the Rouge River west to Burlington has been subject to shoreline treatment, either through erosion and flood protection works or through lakefilling. The eastern half of the shoreline remains in a fairly natural condition.

Human activities change the face of the shoreline



BIOLOGICAL PROCESSES WITHIN THE LAKE

In general terms, the use of the waterfront by fish and other aquatic life is directly related to habitat characteristics, which in turn are related to the physical processes described above. Four main types of aquatic habitats have been identified – open coast convex profile, open coast concave profile, dynamic sands, and sheltered embayments. The relationships between shoreline areas and the lake as a whole are also important to biological processes.

Lake Ontario is very deep and as a result warms slowly in the spring. The open lake is also relatively low in nutrients, approaching an oligotrophic state. Most of the north shore is exposed to wave action and to cold water upwellings which may lower nearshore water temperatures very quickly. As a result, the open coast habitats are most suitable for pelagic (free roaming) coldwater species such as salmon, trout, whitefish, herring, yellow perch, alewife, smelt and shiners. Coldwater fish communities in Lake Ontario have changed dramatically from historic populations as a result of over-fishing, water quality and habitat changes, and introduction of foreign species. Populations of most of the sports fish are now maintained by extensive stocking programs, with some natural reproduction in the easterly parts of the Greenway.

Open coast habitats with bedrock or cobble/boulder substrates and convex profiles appear to be particularly suited to coldwater fish communities, since such dominant species as lake trout and lake whitefish typically rely on these substrates with nearby steep drop-offs for successful reproduction. Headlands, where the greatest aggregations of boulders occur, probably provide the best quality coldwater spawning habitats. The impacts of removal of a large quantity of boulders and slabs from the lake bottom by the historic practice of stone-hooking are not well understood. In most places along the waterfront, evaluation of the productivity and significance of coldwater habitats is hampered by lack of information.

Open coast habitats associated with concave profiles (i.e. Scarborough Bluffs) and the shifting lakebeds associated with dynamic beaches are best suited to species which broadcast their eggs in water, such as lake herring, emerald shiner, alewife and smelt. These fish provide an important forage base for other species, including most of the sports fish. Larger species of fish, such as the salmon species, also use open coast habitats as travel corridors during their seasonal movements.

Sheltered embayments including river mouths, lakeshore wetlands, and lakefill parks provide warmer water conditions and opportunities for development of aquatic vegetation. These areas can support a fish community that includes pike, bass, walleye, bullheads, carp, suckers and minnows. They also provide productive habitat for a diversity of other wildlife, especially reptile and amphibian populations which may be restricted to these areas. Most of this warmwater habitat occurs in four sections of the waterfront – Burlington Bay/Coote's Paradise, the central area from Rattray Marsh to Tommy Thompson Park, in the tributary streams along the Durham coast such as Duffins Creek and Lynde Creek, and the Presqu'ile Bay/Bay of Quinte area.

Many of these nearshore areas have been affected by large quantities of nutrients and fine sediments (some contaminated with toxins) coming from urban watersheds, by the filling of marshes and shorelines to create new land, and by declining aquatic plant diversity caused by reduced water clarity. Habitat generalists such as carp now dominate most sheltered habitats in the western and central sections of the Greenway. The Presqu'ile Bay area is in much better condition, supporting populations of walleye, a species that is unusual elsewhere along the coast, although historically important.

Tributary habitats along the north shore are closely linked to both warmwater and coldwater fish populations in the lake, especially to salmonids (such as rainbow trout, brown trout, Atlantic salmon and the Pacific salmons) which migrate upstream to spawn. Degraded water quality, blockages such as dams, and changes in seasonal stream flow related to agricultural and urban uses within the watersheds have reduced the value of many of these tributary streams. However, most of the tributary streams in the eastern section of the Greenway still provide excellent habitat, and almost all of the larger rivers have good habitat remaining in their upper reaches.

Shoreline and offshore habitats are also very important to migrant waterfowl and shorebirds, and to wintering waterfowl. Sheltered embayments, most notably Presqu'ile Bay, and offshore areas with bedrock substrate such as the Halton shore attract the largest numbers of these birds.

Port Credit Library

A stone-hooker's boat, Port Credit

The impact of invading zebra mussels in Lake Ontario is not yet fully known, but there are indications they are modifying habitat by increasing water clarity, by competing for nutrient supply, by physically clustering on rocky substrates and nearshore structures, and by acting as a food source for wintering waterfowl. Species such as scaup, scoter, goldeneye, oldsquaw, bufflehead and coot have changed traditional feeding areas to congregate in areas with hard shale bottoms, especially along the Halton shore, to take advantage of abundant mussels.

WATER QUALITY: LAKEWIDE AND NEARSHORE

Water quality problems in Lake Ontario are related to three broad groups of pollutants – persistent toxic substances, nutrients, and bacteria. Toxic substances such as organochlorides, heavy metals, and radionuclides are a serious problem when they become concentrated in the food web and cause reproductive or other health problems in fish-eating species. Nutrients such as phosphorus, on the other hand, are not directly toxic but can cause massive blooms of algae, which die off and decay, causing oxygen depletion in deeper waters as well as taste and odour problems in drinking water and aesthetic concerns along the shore. Bacterial pollution, usually related to sanitary sewage and stormwater, can result in beaches being posted to warn people of health risks associated with swimming.

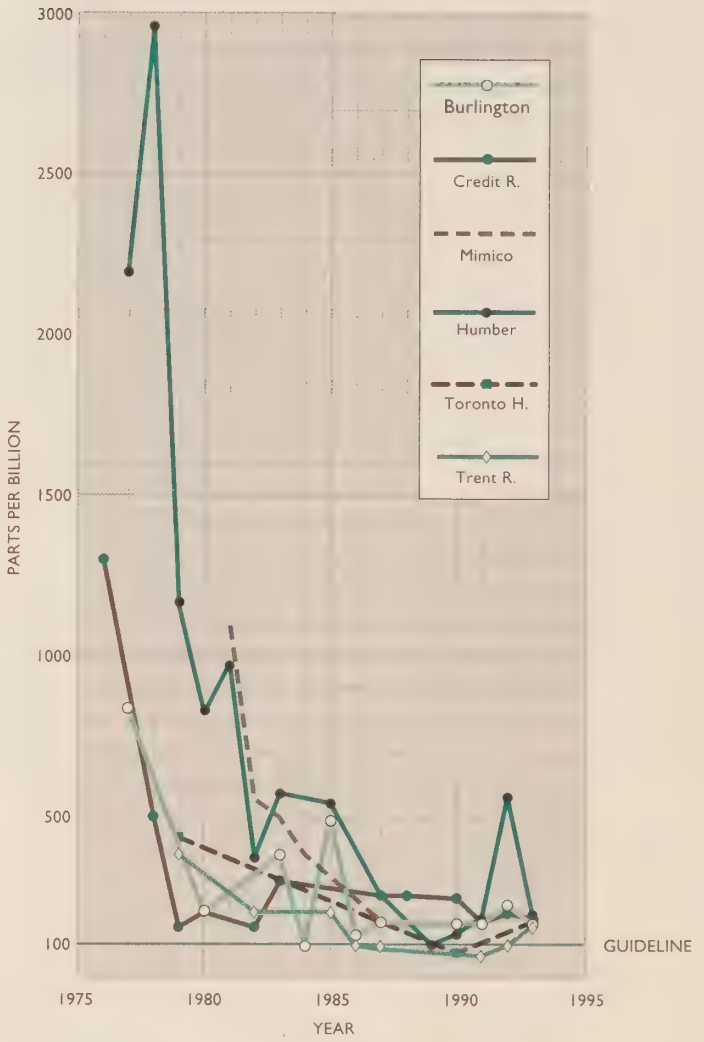


Figure 6
PCB concentration trends in forage fish
Source: Ontario Ministry of Environment and Energy, Trent River fish were yellow perch; all others were spottail shiners

Toxic substances

Levels of most substances have decreased dramatically since the 1970s in lake waters, fish flesh, and wildlife species (see Figure 6). For example, 11 of the 17 organochlorine and chlorobenzene contaminants measured in off-shore waters by Environment Canada have decreased significantly from 1986 to 1990. Of the 41 organic contaminants measured in the Environment Canada offshore monitoring program in 1990, only PCBs remain above provincial criteria for the protection of aquatic life. Continuing efforts will be required to realize the goal of virtual elimination of persistent toxic substances from Lake Ontario.

Drinking water quality is monitored for health-related parameters as part of the operations of all municipal water supply plants along the north shore. In addition, the Ministry of Environment and Energy (MOEE) monitors 12 of the 16 plants (see Map 4) for 150 microbiological and chemical parameters including metals, volatile organics, pesticides and radionuclides. The only parameter exceeding Ontario Drinking Water Objectives in 1991/92 was lead, which had elevated levels in standing water samples in 21 of the 141 samples (probably related to plumbing sources). Flushing water from the tap before using reduced lead levels to within the acceptable range in almost all cases.

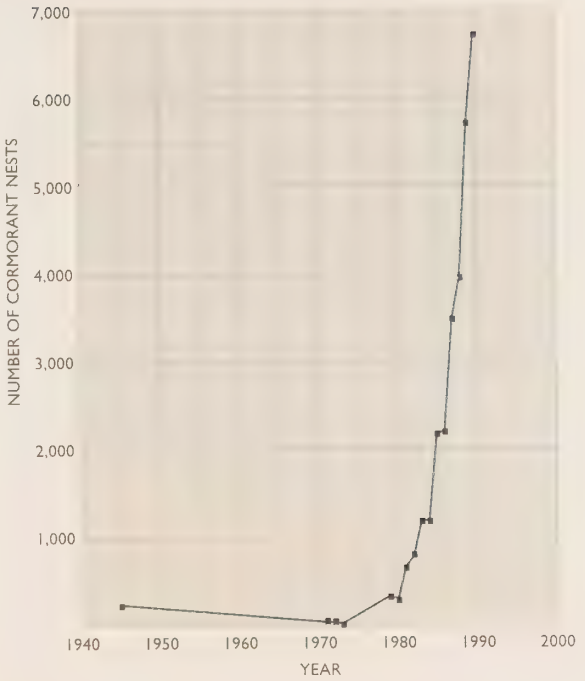
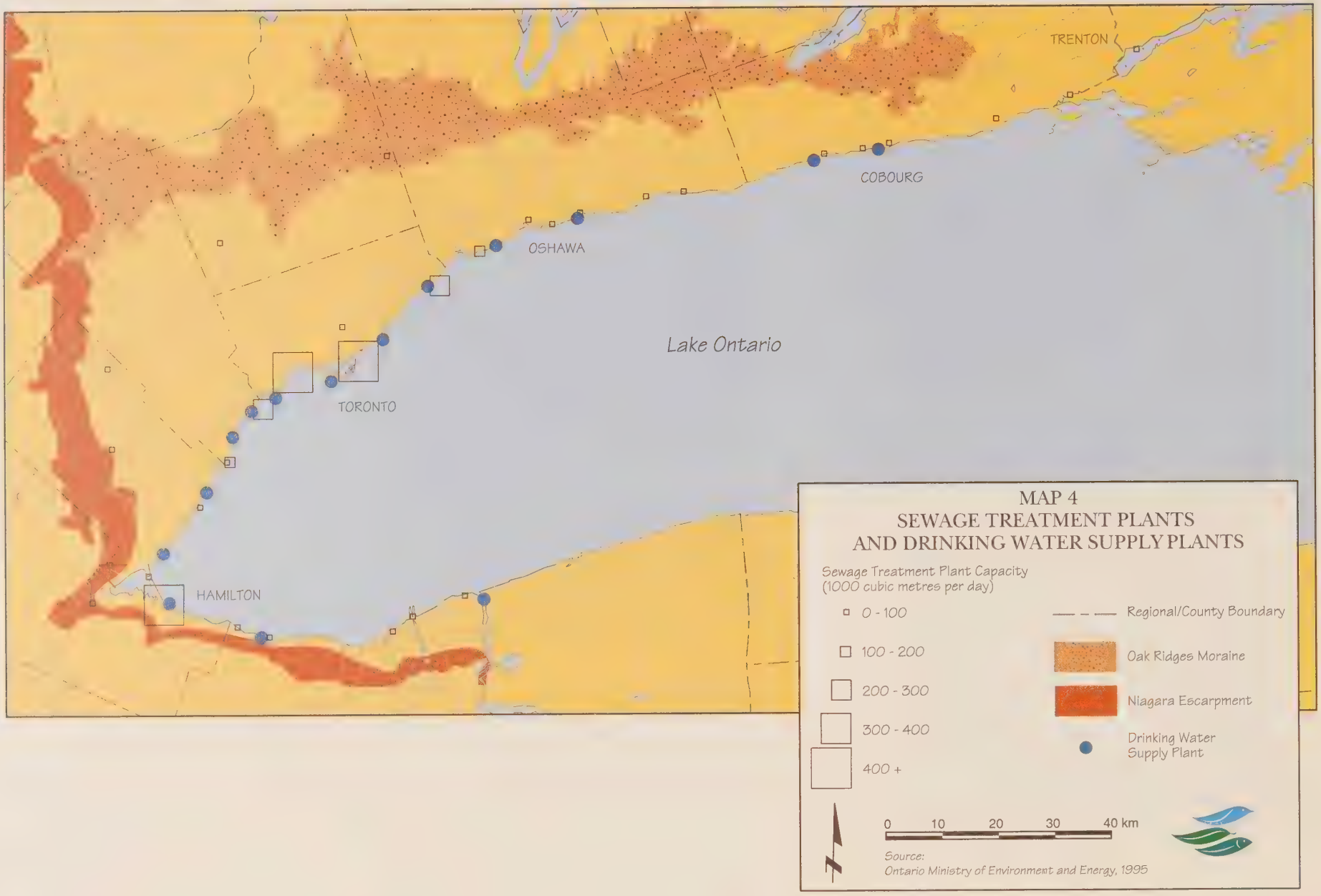


Figure 7
Number of double-crested cormorant nests in Lake Ontario colonies
Source: Environment Canada.


TRENTON
COBOURG
OSHAWA
Lake Ontario
TORONTO
HAMILTON
MAP 4
SEWAGE TREATMENT PLANTS
AND DRINKING WATER SUPPLY PLANTS
Sewage Treatment Plant Capacity
(1000 cubic metres per day)
0 - 100
100 - 200
200 - 300
300 - 400
400 +
Regional/County Boundary
Oak Ridges Moraine
Niagara Escarpment
Drinking Water
Supply Plant
0 10 20 30 40 km
Source:
Ontario Ministry of Environment and Energy, 1995

The Lake Ontario Toxics Management Plan (LOTMP), developed in 1989 by the governments of Canada and the U.S., New York State and Ontario, identified nine priority persistent toxic substances in the lake. This plan will now form the basis for the development of a binational ecosystem-based Lakewide Management Plan (LaMP) for Lake Ontario, with similar LaMPs to be developed for the other Great Lakes. The persistent toxic substances identified by the LOTMP are being assessed for inclusion in the Lake Ontario LaMP, with the goal of virtual elimination of emissions to the environment. A number of the substances being considered are:

- chlordane, which has decreased to non-detectable levels in open waters;
- dieldrin and hexachlorobenzene, which are still detectable but meet all applicable criteria;
- dioxin and mirex, which are at or slightly above the fish consumption guideline;
- DDT and its metabolites, which are no longer detectable in the open water. Cormorant populations have rebounded as a result (see Figure 7); and
- PCBs, which have sharply declined from early 1970s levels, but have levelled off. PCBs are at or slightly above the fish consumption guideline, and exceed the aquatic life criteria in both offshore waters and nearshore forage fish in the central and western sections.

Environment Canada monitors a number of contaminants in the eggs of herring gulls, Caspian terns, snapping turtles and other wildlife. Similar to other findings, contaminant levels in gulls and terns dropped strongly in the 1970s and early 1980s, and have since stabilized at levels which do not appear to be now affecting reproductive success of colonial waterbirds. Snapping turtle egg data, however, show relatively high levels of several toxins at Hamilton Harbour and Lynde Creek, probably related to diet and metabolism.

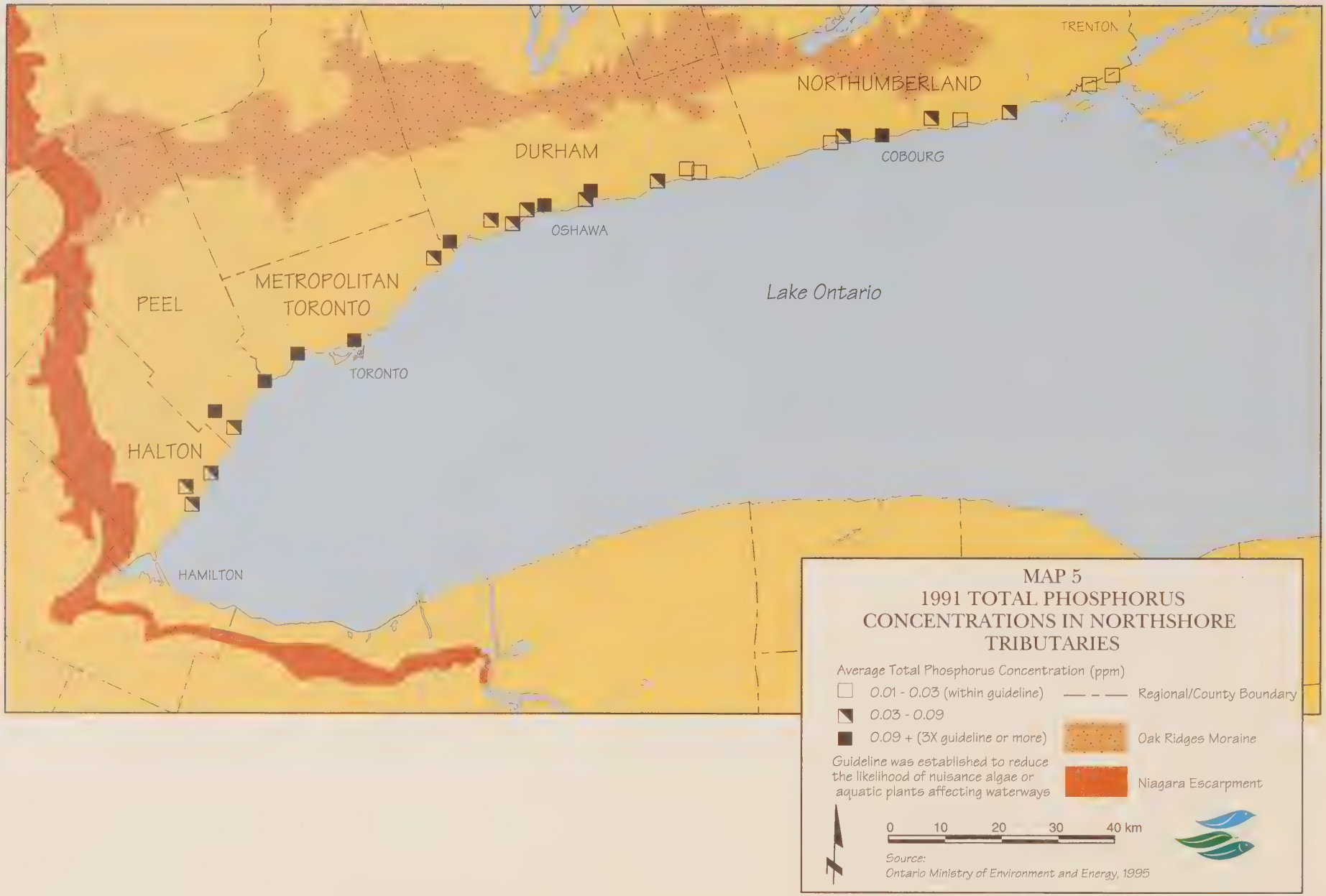
Nutrients

Total phosphorus concentrations in Lake Ontario peaked in 1972, and have decreased to meet provincial guidelines since 1986. Phytoplankton in the open lake have also decreased by at least 50% as a result.

The largest loading of phosphorus to Lake Ontario comes from the upper Great Lakes, and that amount is remaining the same or perhaps increasing. Nutrients from municipal and industrial sources, which mostly pass through sewage treatment plants (see Map 4), have dropped substantially, with reductions of 50% from municipal sources and 85% from industrial sources since 1976.

Daphne Svenningson

Lake Ontario


TRENTON
NORTHUMBERLAND
COBOURG
DURHAM
OSHAWA
METROPOLITAN TORONTO
PEEL
Lake Ontario
TORONTO
HALTON
HAMILTON
MAP 5
1991 TOTAL PHOSPHORUS CONCENTRATIONS IN NORTHSHORE TRIBUTARIES
Average Total Phosphorus Concentration (ppm)
0.01 - 0.03 (within guideline)
0.03 - 0.09
0.09 + (3X guideline or more)
Guideline was established to reduce the likelihood of nuisance algae or aquatic plants affecting waterways
Regional/County Boundary
Oak Ridges Moraine
Niagara Escarpment
0 10 20 30 40 km
Source:
Ontario Ministry of Environment and Energy, 1995

Another major source of phosphorus is run-off from urban areas and agricultural lands into tributaries. As shown on Map 5, only six of 27 monitoring stations at river mouths recorded phosphorus levels within the provincial guideline in 1991. Tributary loads have only decreased by 30%, and are roughly twice the amount contributed by sewage treatment plants.

Nearshore phosphorus levels still exceed provincial guidelines, particularly along the western and central parts of the Greenway, because of contributions from tributary watersheds and local inputs. Nutrient pollution in nearshore areas causes excessive growth of algae along shoreline rocks, which causes aesthetic problems such as fouled beaches and taste and odour problems in drinking water. These concerns are widespread but appear to be most pronounced from Burlington to Oshawa.

Bacteria

While several different standards for bacterial pollution are used along the north shore, the posting of beaches to advise people not to swim is common across the waterfront. In most cases, high bacterial counts are related to stormwater runoff, combined sewer overflows, and faulty septic tanks. Efforts to resolve these problems are underway in many communities, but progress is slow and expensive. Unfortunately, inconsistencies in standards and data collection make it difficult to compare beach postings over time or in different areas.

Areas of Concern

Four Areas of Concern have been identified along the north shore of Lake Ontario by the International Joint Commission (see Map 9). These Areas demonstrate the largest clusters of water quality concerns leading to impairment of beneficial uses. Contaminated sediments appear to be largely confined to sheltered embayments within the Areas of Concern, although other embayments and river mouths require further assessment. For each of the four Areas of Concern, a Remedial Action Plan (RAP) process is underway. (See also Action 2.5)

Sources of water pollution

Hamilton Harbour

- largest concentration of heavy iron and steel industries in Canada;
- major use impairments associated with:
  - point and nonpoint source pollution, combined sewer overflows,
  - contaminated sediments,
  - shoreline and land use development;
- 75% of original wetland and shallow water habitats eliminated; and
- RAP implementation well underway.

Metro Toronto and Region

- includes six watersheds from Etobicoke Creek to Rouge River;
- urbanization has contributed to impairments from:
  - heavy metals and organic compounds,
  - bacterial problems from urban runoff,
  - combined sewer overflows,
  - sewage treatment discharges,
  - historical loss of habitats; and
- RAP implementation in early stages.

Port Hope Harbour

- problems restricted to turning basin and west slip areas of harbour;
- contamination of bottom sediments by radionuclides, heavy metals, PCBs;
- sediments classed as low-level radioactive waste, requiring federal resolution; and
- RAP planning underway but implementation not yet begun.

Bay of Quinte

- large drainage area, mostly rural and small urban centres;
- use impairment arising from:
  - diffuse agricultural inputs of sediments and phosphorus,
  - sewage treatment plants,
  - industrial discharges,
  - urban runoff,
  - atmospheric deposition; and
- RAP implementation in early stages.

AIR QUALITY

Air quality along the north shore of the Lake is influenced by weather patterns, by sources of airborne contaminants generated within and outside the Greater Toronto Bioregion, and by the chemistry of the pollutants themselves, which can react to form secondary pollutants such as ground-level ozone.

Large-scale weather patterns can lead to periods of higher pollutant levels by enhancing transport into the region and concentrating the impacts, as in smog episodes or periods of high-acidity precipitation. Local patterns such as lake breezes can significantly influence the way that pollutants spread and react with each other.

Pollutants have limited lifetimes in the atmosphere before they react with each other or return to the surface. For the Bioregion, a period of five days is adopted as a representative maximum lifetime. An air quality "airshed" is defined using this travel time and typical air mass movement rates. This five-day airshed, which can contribute pollutants to Ontario, has been estimated to extend as far as Hudson Bay, the Dakotas, central Georgia, and New Brunswick. More than half the ground-level ozone over Ontario originates from emissions outside this province.

Persistent toxic substances can be transported from even beyond this airshed because they are slow to break down. Substances such as hexachlorobenzene, PCBs and mercury are deposited in the Great Lakes by atmospheric fallout.

Air quality is also influenced by industrial and transportation activities in the Bioregion itself. Vehicles, coal-fired generating stations, furnaces and certain industries all produce emissions that can impair air quality locally or across a broad region.

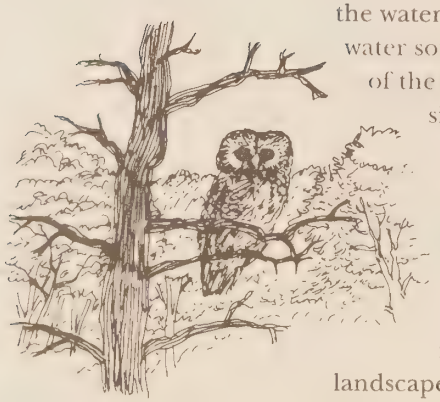
Over the past two decades levels of some air contaminants (such as sulphur dioxide and lead) in the Bioregion have been declining, due mainly to better regulation of industrial emissions, more fuel-efficient cars, a shift from coal and oil to natural gas, and replacement of leaded with unleaded gasoline. For some contaminants, such as carbon monoxide and particulates, these changes have brought overall improvements, but with continued local problem areas. Levels of nitrogen dioxide and volatile organic compounds have remained relatively constant. Improved control of the main point sources of these pollutants has been offset by the growth in the number of vehicles on the roads. Levels of ground-level ozone often exceed health-related guidelines on warm sunny days, particularly in suburban areas.

Transportation is a significant source of air pollution: the Gardiner-Lakeshore transportation corridor, downtown Toronto

LANDSCAPE BIODIVERSITY

The Lake Ontario Greenway encompasses a relatively narrow strip of land and water, generally extending inland to the first major rise in elevation and offshore to a depth of about ten metres. This landscape is heavily influenced by its proximity to the lake (in moderating climate, for example) and by its inter-connections with the Bioregion. As outlined in *A Natural Heritage Strategy for the Lake Ontario Greenway* in the toolkit, these elements support a diverse flora and fauna and several critical habitat functions.

The future health and biodiversity of the waterfront are in part dependent on the protection of the hydrological and habitat values of the Niagara Escarpment and Oak Ridges Moraine, since these important bioregional features are linked to the waterfront by watercourses and valleys that allow species movement and replenishment. Closer to the waterfront, the wooded corridors and groundwater source areas associated with major sections of the former Lake Iroquois shoreline provide similar functions at a local scale.

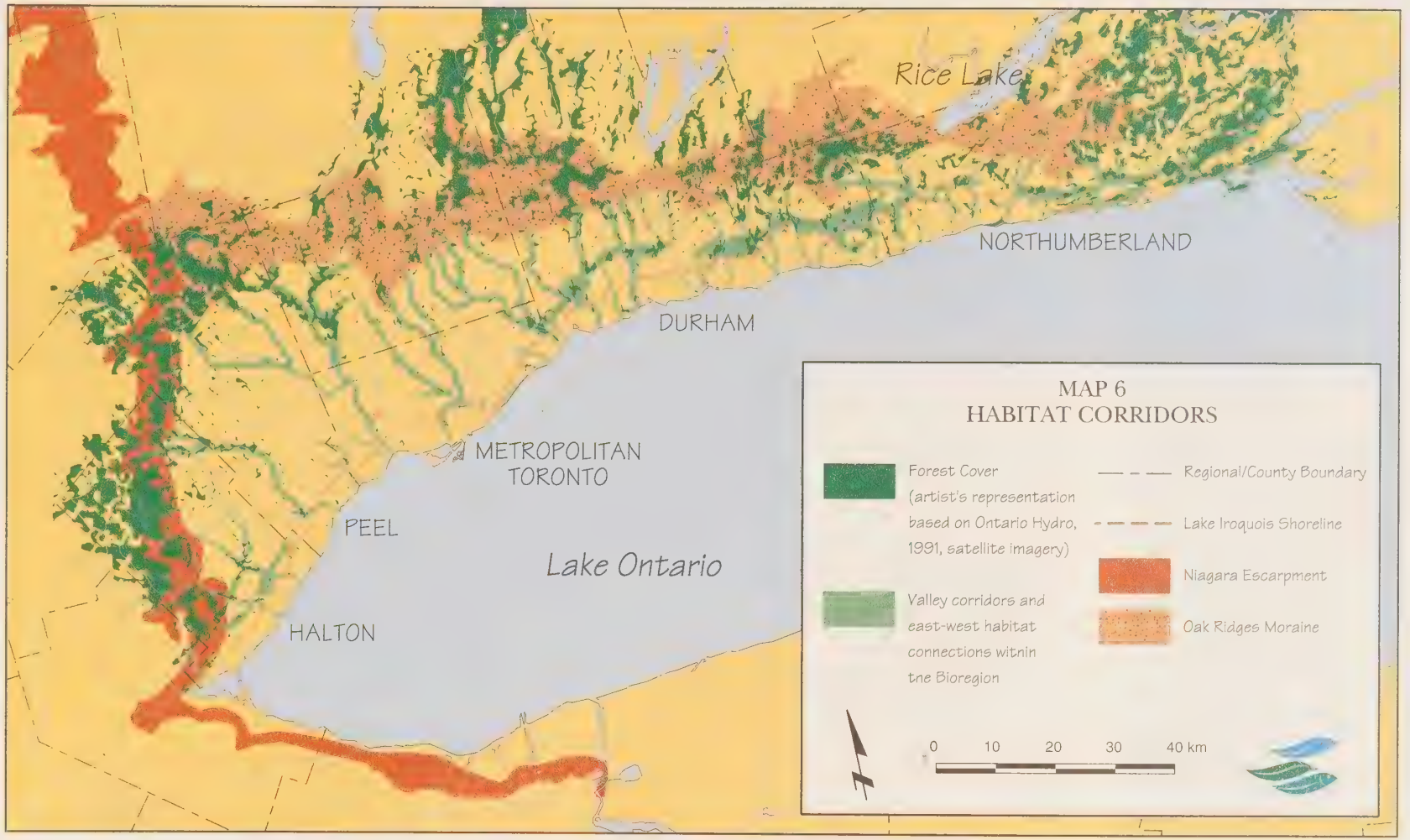


A system of 35 major valley corridors (see Map 6) provides the major linkages for species movement to and from the waterfront, including seasonal fish spawning and rearing, bird and butterfly migration, and dispersal of species into new or impoverished habitats. These landscape connections may become even more important in future if ecosystems have to adapt to range shifts brought about by more extreme climatic fluctuations. Some of the valleys which provide otherwise relatively continuous habitat corridors have very little riparian vegetation and/or seriously degraded water quality near their mouths.

East-west habitat connections near the lake are vital to assist in species dispersal and migratory movements, particularly for many species of birds and butterflies which migrate along the edge of the lake rather than cross open water.

Some habitat types are clearly in short supply within the Bioregion, although a comprehensive supply analysis has not been completed. Wetland habitats and interior forest (blocks of forest buffered from the nearest edge by at least 200 metres) are two habitat types known to be greatly reduced from their former extent.

Remaining forest cover is now typically less than 5% in urban areas, and ranges from 2% to over 20% in rural sections (see Figure 8). Except in the more heavily forested landscapes, this is clearly not adequate to sustain biodiversity in the long term; the background report *Waterfront Natural Areas* lists 500 plants, 57 bird species, and 15 reptile and amphibian species as rare along the waterfront. Many of these species are known from only one or two locations; their long-term survival is in jeopardy in such a fragmented landscape.


Rice Lake
NORTHUMBERLAND
DURHAM
METROPOLITAN
TORONTO
PEEL
Lake Ontario
HALTON
MAP 6
HABITAT CORRIDORS
Forest Cover
(artist's representation
based on Ontario Hydro,
1991, satellite imagery)
Valley corridors and
east-west habitat
connections witnin
tne Bioregion
Regional/County Boundary
Lake Iroquois Shoreline
Niagara Escarpment
Oak Ridges Moraine
0
10
20
30
40 km

Evaluation of Natural Core Areas

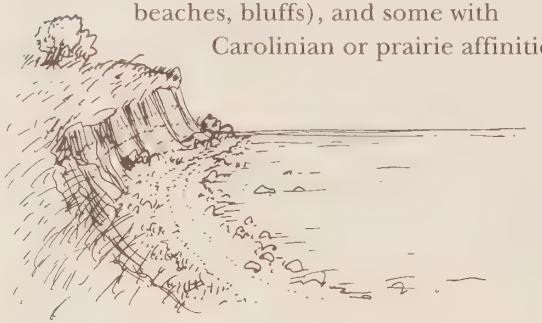
Evaluation of natural core areas is based on their meeting at least two of the following criteria:

- **landform representation, rarity and diversity**
- **hydrological function**
- **vegetation community representation and diversity**
- **vegetation community rarity**
- **quality of habitats and communities**
- **species diversity**
- **species of concern**
- **habitat for seasonal concentrations of wildlife or fish**
- **area size, shape and buffering capacity**
- **linkage and clustering**

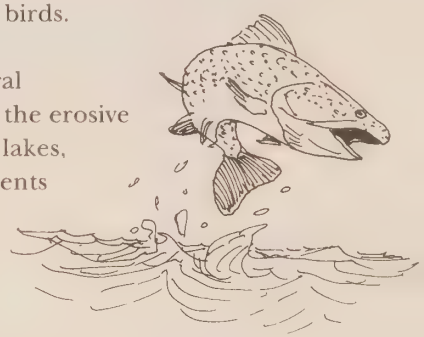
While these criteria were developed by the Natural Heritage Workgroup specifically for the Lake Ontario Greenway, they correspond closely to the definition of natural heritage features and areas in the Provincial *Comprehensive Set of Policy Statements*.

Because of the nature and concentration of human activities along the waterfront over the past two centuries, natural habitats exist now as relatively small and isolated remnants, particularly in the western and central sections of the Greenway. These remnants provide a number of associated ecological values:

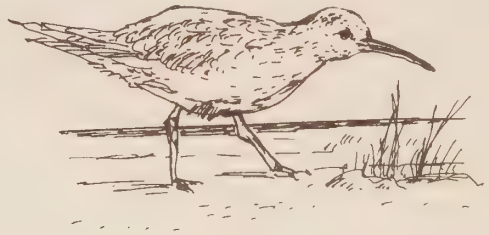
- A variety of representative and specialized landforms and natural communities, including those associated with current and previous Great Lakes shorelines (such as dunes, beaches, bluffs), and some with Carolinian or prairie affinities.



- A large diversity of species, including 1510 known species of vascular plants, 165 breeding species of birds, 47 mammals, 34 reptiles and amphibians, and 47 species of fish. Included among these are many species that are endangered, threatened, or vulnerable.
- Critical breeding destinations for fish, amphibians, and birds which disperse broadly into the surrounding environment, as well as important staging and wintering areas for a large number of migratory birds.
- The capacity of natural landscapes to reduce the erosive effect of streams and lakes, and to capture sediments and nutrients from adjacent landscapes before they enter the lake.



- The patterning of woodlands or marsh habitats which in some places provides large blocks or corridors that act as source areas for species and genetic replenishment of adjacent areas, or as linkages between similar habitats.



Based on a considerable amount of field data collected over the years by various agencies, 90 waterfront natural core areas have been identified (see Map 10 and Appendix A). These areas include all provincially significant wetlands and ANSIs (Areas of Natural and Scientific Interest) along the waterfront, as well as significant warm-water and coldwater migratory fish habitats, and other significant natural areas.

The biodiversity of the Greenway has been influenced by the invasion of non-native species, including well-known plants such as purple loosestrife, and birds such as mute swans, starlings, and rock doves. Approximately 33% of the vascular plants growing wild in the Greenway are non-native in origin.

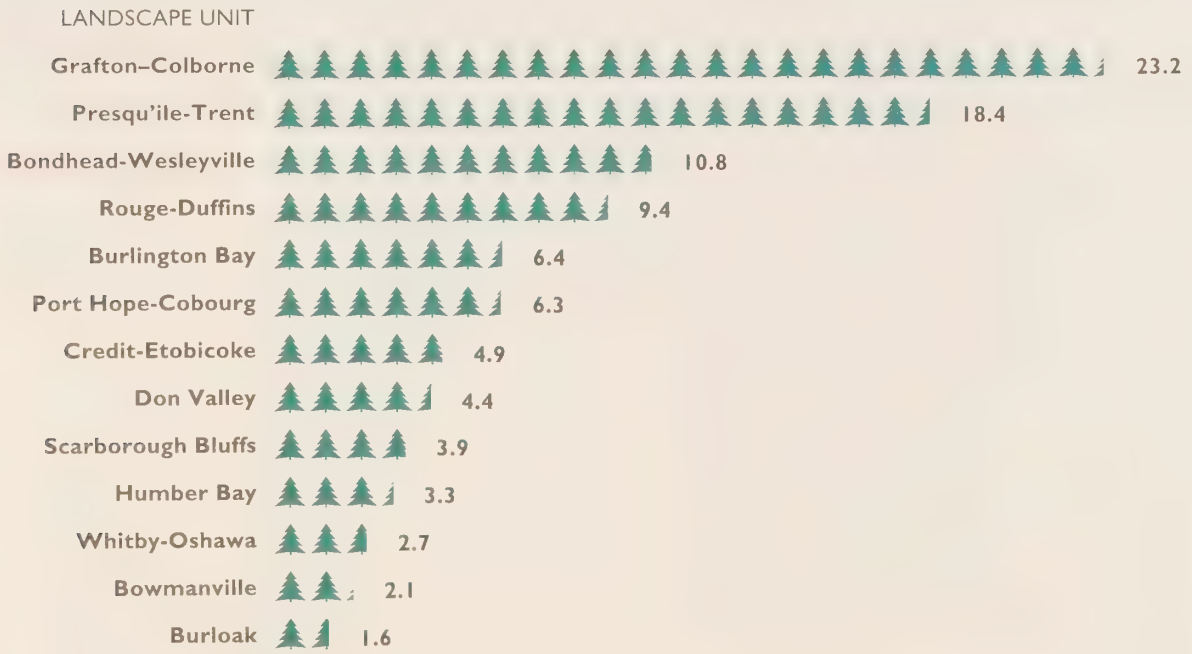


Figure 8
Percent forest cover in the landscape units of the Lake Ontario Greenway

EVALUATION OF ARCHAEOLOGICAL SITES

The significance of archaeological sites can be evaluated using a framework that considers:

Information Potential
- **site integrity**
- **context**
- **content**
- **potential for the presence of human remains**
- **quality of documentation**

Perceived Value
- **public interest**
- **educational potential**
- **importance to specific ethnic groups**
- **landscape setting**
- **economic potential**

See *Settling the North Shore* and the *Cultural Heritage Conservation Manual* for further information on site evaluation.

THE DEVELOPMENT OF HUMAN COMMUNITIES

There have been human communities along the water's edge as long as the Lake Ontario waterfront has existed – some dating back at least 11,000 years, to a time shortly after the scarred and barren landscape emerged from under the glacier's weight. The development of these communities was influenced strongly by their access to the lake – first for food, transport and trade, later for water supply, waste disposal, and recreation.

Archaeological sites along today's waterfront provide a small window into native uses of this area, although this is only a fraction of the sites that probably exist. As a few well-studied sites like the Lynde Creek area show, native use was particularly heavy in the vicinity of river mouths and along inflowing rivers. Native peoples used the lake edge for transportation and for food, and some village sites show continuous use over thousands of years.

The fur trade era (from about the year 1600 onwards) showed a strong relationship to the waterfront, with French and British posts often located near traditional native villages or portage routes such as the Toronto portage (linking up the Rouge and Humber valleys to Lake Simcoe) or Carrying Place between Wellers Bay and the Bay of Quinte. These sites often became the foundations of later settlements. This era also demonstrated a culturally diverse "middle ground" aspect (where people of differing backgrounds came together), that is very similar to current social conditions in the Bioregion.

The first major transformation of the landscape occurred during the agrarian, or farming, era (from approximately 1780 onwards) when the forests were cut down and the modern pattern of fields, roads and communities was laid out. To the aboriginal and French settlements was added a strong contingent of British immigrants and United Empire Loyalists from the American colonies, especially in the eastern sections of the Greenway. These farm communities were often more culturally diverse than commonly thought, with expressions of Irish, French Canadian and German minorities, and a significant black presence. Many elements of this agrarian era are still intact, such as historic farmsteads and mills, especially in the less urbanized sections of the Greenway.

Agrarian industry was based on wind and water power. The industrial basis for the modern economy developed after the establishment of coal-fired steam power and electrification. Freed from waterpower sites, the growing populations located in cities near labour markets and transportation nodes.

The industrial heritage of the north shore (beginning in the mid-1800s) is represented by harbours (including many smaller harbours no longer in industrial use), factories and factory complexes, and later more advanced facilities such as oil refineries and branch-plant automotive industries. The industrial era saw the beginnings of immigrations from different parts of the world, such as Italy and China, which have since strongly influenced the region's demographic profile.


1991
1891
1781
TORONTO
WHITBY
TRENTON
P
FIGURE 9
PATTERNS OF URBAN GROWTH
AND TRANSPORTATION
Railway
Major Expressway
Port Facilities
Native Village
Trading Post
Portage Route
Water Route
Population
500 000+
250 000-500 000
100 000-250 000
50 000-100 000
20 000-50 000
9 000-20 000
5 000-9 000
2 000-5 000
< 2 000

Evaluation of Built Heritage

Evaluation of built heritage resources should include consideration of:

Architecture
- **aesthetic design (visual quality)**
- **functional design (functional quality)**
- **designer (illustration of the work of an important designer)**

Historical Associations
- **thematic (illustration of a representative theme)**
- **event (associated with significant event)**
- **person/group (associated with significant person or group)**

Environment
- **landmark (conspicuous)**
- **character (influence on character of surrounding area)**
- **setting (integrity of historical relationships with landscape)**

Social Value
- **public perception**

See *Settling the North Shore* and the *Cultural Heritage Conservation Manual* for additional information on resource evaluation.

The second great transformation of the landscape occurred as a result of industrialization and urbanization of the cities and suburban areas. As a result, a large amount of the productive farmlands within the Greenway have been removed from agricultural production, and converted to urban uses. This process is continuing today, although the waterfront economy appears to be now moving into a post-industrial stage.

Areas where the heritage of these past eras is strongly expressed within the existing landscape include archaeological sites, buildings and other structures with historical or architectural significance, and cultural heritage landscapes.

While all landscapes along the Greenway are primarily cultural in origin, those with human heritage qualities worthy of protection are identified as cultural heritage landscapes. Over 200 selected cultural heritage landscapes have been identified in the background report *Settling the North Shore*. Often associated with these areas are historic or architecturally significant structures, of which approximately 540 have been formally designated by municipalities along the waterfront.

Humber River heritage

Cultural heritage landscapes incorporate clusters of human-made features, particularly those elements that demonstrate past human activities and the forces that guided them. Some of the cultural heritage landscapes identified within the Greenway, for example, relate to the historic downtown shopping districts of waterfront communities; others represent ports and harbours or industrial areas. As well, important linear features such as sections of Highway 2 and rail corridors have been highlighted as cultural heritage landscapes. Cultural heritage landscapes can also be identified at a finer scale, such as the pattern of buildings, treelines, and fields making up a typical farm complex.

Cultural heritage is not only a reflection of the past for waterfront communities, but also a continuation of traditions in the present. Most waterfront communities celebrate their cultural traditions through the arts and through community events. At least 32 cultural venues for fairs, shows, theatre productions and concerts have been identified along the waterfront, along with 44 annual events, festivals, and similar activities. Many more community events at a smaller scale also contribute greatly to the life of small towns and large cities alike.

The cultural imprint upon the landscape also strongly influences the ways in which visitors and residents experience the area, especially visually. As part of the *Waterfront Experiences* background report, 52 visual units have been described in terms of their natural and cultural heritage, scenic resources, and interpretive potential.

Understanding the distinctive character of each of these visual units, and the ways in which each is perceived as special or unique by the people who live there, is essential to understanding the potential effects of proposed changes. Toronto's Eastern Beaches, for example, has a very distinctive residential character which is highly valued by Beaches' residents; the first step in protecting its qualities is to comprehend the elements that make this area unique, and how those elements relate to the waterfront as a whole.

The *Waterfront Experiences* report also maps sites with significant or memorable views (see Map 11). These observation points have views that are not only panoramic, but also offer a perspective that can inform and give greater meaning to the landscape, such as the views in the Burlington area that emphasize the relationships between the Niagara Escarpment and Burlington Bay. Some 83 visual landmarks are also identified, which act as entrance features or "signatures" for communities (e.g. the Ford plant in Oakville), which open a window to the past (e.g. Victoria Hall in Cobourg), or which act as a beacon for boaters (e.g. Peter Rock off Port Hope).

Identification of Cultural Heritage Landscapes

Similar criteria can be used to identify and assess cultural heritage landscapes:

Historical Associations
- **illustrates representative themes**
- **associated with significant event**
- **associated with significant person or group**

Scenic Amenity
- **sense of place**
- **opportunities for a series of interesting views**
- **material content (pleasing in colour, texture, style, and scale)**

Social Value
- **public perception**

See *Settling the North Shore* and the *Cultural Heritage Conservation Manual* for further information on cultural landscape assessment.

The Stone Lion

A Monument to Courage & Creativity

From its vantage point in Toronto's Sir Casimir Gzowski Park, the famous Lion Monument guards the Waterfront Trail and the new pedestrian-bicycle bridge at the mouth of the Humber River. Originally erected in the median of the Queen Elizabeth Way to commemorate the 1939 visit of King George and Queen Elizabeth (the Queen Mother), the "lucky lion" marked the western automobile gateway to Toronto for 35 years. The larger-than-life lion poised at the base of architect W.L. Somerville's regal column was the work of Toronto sculptor Frances Loring. The artist didn't know when she accepted the commission that the monumental work would demand every ounce of her talent, strength, and courage.

Because the lion was carved from an enormous stone that became the base of the monument, the work had to be completed on-site. Although it was not Loring's preference, the Province insisted on the use of Queenston limestone. Given the patriotism of the times, superior stone carvers of Italian or German origin could not be used. A less-skilled British carver began duplicating Loring's original plaster model, but when he made some unauthorized changes he was fired. The 53-year-old Loring decided to complete the carving herself, though she had not done such work for nearly 30 years and was unfamiliar with the power tools needed. Despite the difficulties and the November winds blowing in from the lake, she worked furiously to complete the sculpture before the end of 1940. The result is one of Canada's finest architectural works of art. Unfortunately, Loring paid a high price for success; her determined effort worsened the arthritis that had begun to plague her.

Frances Loring sculpted a snarling, defiant British lion that symbolized Britain's position of defiance, confidence, and readiness at the start of the Second World War. The artist's ability to capture in stone the beauty, drama, and tension of an animal rising to fight is as admirable today as it was then. More likely to be noticed by pedestrians and cyclists enjoying the waterfront than by motorists, the Lion Monument exhibits the pride and courage that inspired its creator.

SOURCE:
QEW: Canada's First Superhighway,
Robert M. Stamp, 1987

Darcy Baker, Waterfront Regeneration Trust

Lion Monument and Humber River
Bicycle-Pedestrian Bridge

To analyze the landscape visually, special attention is paid to the elements of:

- distinctiveness: the local identity created by unique combinations of natural and cultural features;
- harmony: the repetition of similar land use patterns, views, styles, and architectural details;
- integrity: opportunities to observe the past through unchanged landscape features; and
- openness: visual and physical accessibility to the waterfront.

Other sensory experiences are also an important part of the waterfront setting. Most people can associate the waterfront with particular sounds (e.g. waves, foghorns), odours, temperature and humidity differences, sense of touch (such as burning sands, weather-worn docks), and strong seasonal changes.

Charity Landon, Waterfront Regeneration Trust

Dragon Boat Race Festival, Toronto Islands

HUMAN POPULATIONS OF TODAY

A common theme in human communities, both past and present, on the north shore of Lake Ontario is a long tradition of cultural diversity. That diversity today is represented in a population with roots in over 100 ethnic groups, and in a range of communities from Canada's largest urban centre (with the City of Toronto at over 635,000 people) to small, closely-knit villages (such as Colborne with a 1991 population of 2001).

In all the waterfront municipalities taken together, the 1991 population born in Canada (the "non-immigrant population" in census terms) was only 60% of the total population. The degree of diversity differs considerably along the Greenway, with Scarborough having the lowest born-in-Canada ratio at 53% of its population, and the 11 Northumberland municipalities reporting the highest, ranging from 86% to 92%. In all but six waterfront municipalities, the largest group of people listed their origins as "multiple", meaning that their family background includes several countries.

Most of this cultural diversity reflects the increased variety of immigrants entering Canada in recent years, but some elements have a long history in Canada. While there are currently no First Nation lands along the Greenway, today's native population along the Lake Ontario shore is quite large, since many native people have moved to Toronto or other urban centres in search of employment. This urban population, along with the current native populations of Six Nations people at Tyendenaga east of Belleville and on the Grand River, and the Mississauga settlements of Alderville, Hiawatha, Scugog and New Credit, reflect what is probably an age-old mixture of diverse First Nations peoples.

People who live along the waterfront appear to have very similar income levels and social characteristics to adjacent communities north of the Greenway. The majority of households in the Greenway (69% to 75%) have children; children under 17 make up roughly 20% of the population. On average, residents allocate just under 5% of their consumer spending to recreation.

It is clear, however, that the demographic makeup of the Bioregion is changing rapidly. A presentation to the Economic Forum on the Future of the Greater Toronto Area in November 1994, entitled *Demographic Forces Radically Changing Canada, the World, and Especially Toronto,* outlines five major changes that this part of the world must respond to:

- an aging population – the percentage of people over age 65 will increase from 11% in 1986 to a stabilization level of around 20%; tomorrow's seniors will be more active and much better educated;

- slowing growth – fertility rates have been relatively low and stable for two decades; in coming decades, the rate of growth in population will slow (although actual population numbers will still increase significantly);

- jobs moving out of manufacturing – the security of employment in traditional industries is declining; other sectors are growing (see next section);

- new types of families – since 1961, there has been a tremendous shift to double-income families, which are now five times as prevalent as the one-income family with a working husband; and

- new immigrants – immigrants to Canada favour the Toronto area, probably because of economic opportunities; about 1/3 of current immigrants are from Asia and 1/3 from Europe, compared to 3/4 of immigrants coming from Europe in 1960.

An understanding of the human populations of the Lake Ontario Greenway is important in evaluating the kinds of recreational and economic opportunities that should be encouraged. In particular, the changing demographic mix in the larger urban centres suggests a need to reach out to the full spectrum of residents to ensure that future Greenway facilities and services will meet their needs.

Suzanne Barrett: Waterfront Regeneration Trust

Caribana, Toronto

Lisa Ohata, Royal Commission on the Future of the Toronto Waterfront

Relaxing at Centre Island, Toronto

24%
1981

18%
1991

Change in manufacturing labour force

THE ECONOMIC ENVIRONMENT

While the economic environment of the waterfront area interacts strongly with the rest of the Bioregion, at least six sectors have special significance within the Greenway – industrial, transportation, residential, office and commercial, agricultural, and tourism (see next section). All of these sectors are experiencing considerable change, and all are influenced by economic forces acting well beyond the Bioregion.

Industrial

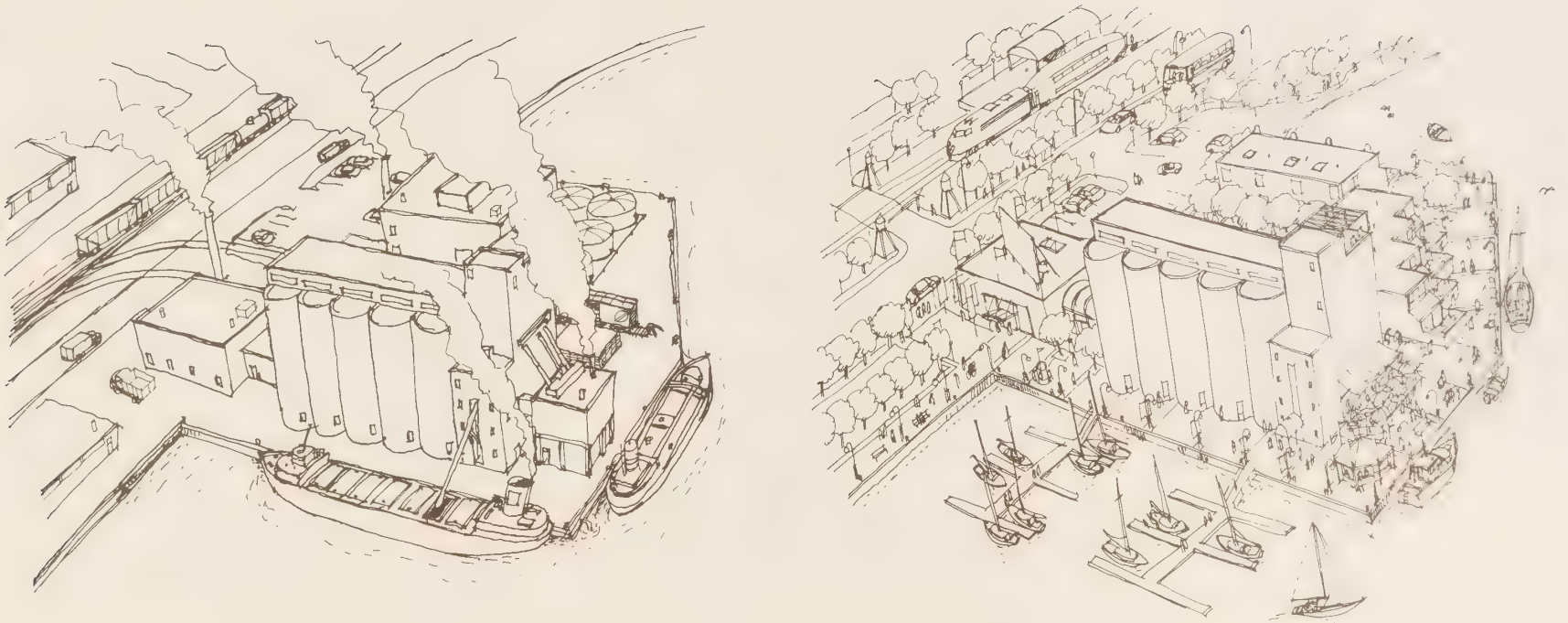
A considerable body of evidence suggests that the north shore of Lake Ontario, like everywhere else, is in the midst of a fundamental change in its economic relationships – a shift into what has been termed "the post-industrial era", as economic growth is concentrated in service and high-tech businesses.

Traditional goods-producing industries are an important and ongoing part of most waterfront municipalities, but their share of overall employment is declining. In the Greater Toronto Area as a whole, the share of the labour force in manufacturing has dropped from 24% in 1981 to 18% just 10 years later. This trend is particularly pronounced in the older industrial districts in Metro Toronto. One side-effect of this change is a growing inventory of former industrial lands, some heavily contaminated, available for alternate land uses.

In part, this loss of manufacturing capacity has been the result of movement of factories to the urban fringe to escape high property taxes, high land values, and highway traffic congestion. In part, it is a consequence of increasing world trade, with many manufacturing jobs moving to Asia or other low-cost locations. It is anticipated that in the future most manufacturing along the waterfront will relate to high value-added products or those with substantial transportation costs.

The relative importance of different sectors is also changing. The waterfront has several concentrations of industrial specialties, such as auto manufacturing and auto parts in Oshawa and Oakville, and plastics in the Cobourg area. These industries have been relatively stable, with some recent growth. The automobile and auto parts industry, for example, has been a leading export sector in recent years. But the largest economic growth in provincial terms in the past five years has come in the information technology, pharmaceutical, biotechnology, and business services sectors. An increasing proportion of new jobs is being created by small companies with fewer than 10 people.

The impact of these changes has differed from place to place along the waterfront. Some industries, particularly heavy ones, have vacated their waterfront locations; examples include oil refineries and distribution facilities in Oakville and Toronto, a starch production plant in Mississauga, a soya processing factory in Toronto, and other industrial installations in south Etobicoke.



Changes in the economic base

Diana Jardine, Ministry of Municipal Affairs

Gardiner-Lakeshore transportation corridor, Humber Bay

Other waterfront industries have survived, successfully responding to change, re-investing in their plants, keeping existing products and markets and finding new ones. These include such well-known companies as Ford in Oakville, General Motors in Oshawa, Nabisco in Etobicoke, Redpath Sugar and Lever in Toronto, and St. Marys Cement in Clarington.

New enterprises, including many small businesses, have emerged and are taking root in waterfront locations such as Garrison Common North and the Lower Don Lands in Toronto, in many parts of Mississauga, and on the Whitby waterfront. These include television, film and communications, graphics, health research, and recycling industries.

In addition, other economic activities such as tourism, sports, trading and entertainment are seen to have enormous potential for growth in the waterfront area and the region, if properly located, planned and managed.

Transportation

Transportation corridors – road, rail, and lake – are a major feature of the Greenway landscape. Since manufacturing is increasingly carried out by networks of firms rather than large single plants, the ability to efficiently move goods will continue to be important.

While most of the major road network within the Greenway is in place and unlikely to change except in relatively small areas, the future of other transportation modes is less certain. Ongoing discussions about the future of the rail companies in Canada could affect the waterfront area, perhaps freeing up some rail routes for expanded regional rail systems such as GO Transit. Deregulation within the transportation industry and federal privatization of some facilities will also produce changes in the intercity bus industry and airport operations.

Industrial use of federally-operated harbour facilities in Toronto and Oshawa has been declining, but use of Hamilton Harbour and some private facilities is growing. A number of docking facilities continue to serve individual industries, such as

St. Marys Cement in Clarington, Lakeview Generating Station in Mississauga, and Redpath Sugar in Toronto. The St. Lawrence Seaway saw its first growth in tonnage in some years in 1994. However, long-term trends in the transportation industry have seen substantial growth in the trucking sector, with other modes, notably lake shipping, assuming a smaller share of the market. The Ontario Ministry of Transportation, together with municipalities, is undertaking a Greater Toronto Area Transportation Plan which will provide direction over the next 30 years.

Residential

The Lake Ontario waterfront has long been regarded as an attractive place to live, but the nature of residential areas has changed considerably over the years. The large lakeshore estates which once were common in Oakville, Burlington and Cobourg have mostly been converted to smaller residential lots. Many former cottages have been transformed into year-round homes. In larger centres, medium to high rise apartments and condominiums have become increasingly common. However, much of the new residential development near the waterfront still follows a traditional suburban single-family pattern.

Concerted efforts are being made to change the nature of residential development across Ontario from the suburban sprawl that has become typical over the last generation. Among the factors prompting this change are:

- Emerging provincial policies and regional Official Plans which support more compact nodal forms of development within existing urban areas rather than endless expansion. These policies also discourage scattered rural residential growth, and permit municipal development charges to cover infrastructure costs.

- The economic recession, which has curbed demand for luxury housing, and caused buyers to allocate less of their income to housing over the past four years.

- Changing information technology, which allows many jobs to be performed from home offices. Non-farm workers in home offices now approach 5% of the working population along the Greenway, with the highest ratios in Toronto and in Hamilton Township. For these workers, quality of lifestyle is an important location factor.

- An aging population, which is expected to create substantially increased demand for apartment and row housing formats, and for retirement and "new lifestyle" communities.

A suburban neighbourhood

Suzanne Barnett/Waterfront Regeneration Trust

Cori Arthur, Northumberland Tourism Bureau

Apple-growing is an important part of the agricultural economy of Northumberland County

Office and Commercial

With close to 85% of the current office space in the GTA, Metro Toronto will continue to function as the dominant office centre along the waterfront. However, there has been a clear trend to increasing growth in major office space outside Metro. In the 1970s, the four regions around Toronto captured 16% of the annual growth in major office employment in the GTA as a whole. By the 1986-1991 period, that share had increased to 34%. Fuelling this trend in commercial development are high population growth levels in the regions, lower occupancy costs, availability of parking, and new technology allowing decentralization of many office functions.

Quality of life is increasingly being considered as a significant factor in business location decisions, providing new opportunities for communities with attractive waterfronts and natural settings. Recognizing this trend, municipalities such as the Region of Durham and the Town of Clarington feature natural scenes on the covers of their recent economic development brochures.

Change is occurring in the retail sector as well. As supermarkets and chain retail stores grow progressively larger, downtown retail stores may have to depend more on integration with cultural, recreational, and entertainment facilities to continue to function as a destination for shopping.

Agricultural

Farming and related support industries continue to be major economic contributors in the Greenway from Oshawa eastwards. For example, agriculture is the leading industry in Northumberland County with annual gross farm receipts of approximately $115 million. Beef, mixed, and dairy farms occupy the largest acreage, but many farmers also specialize in fruit and vegetables, poultry, or other commodities.

The Northumberland County waterfront area has a long history of apple-growing, which depends on the specialized climatic conditions provided by cold air drainage to the lake. In 1993, over 2300 acres (930 hectares) of apple orchards were active within the County.

Because low domestic prices and international competition make agriculture a difficult industry for many producers, continued innovation in technology, farming practices and crop selections can be expected.

WATERFRONT VISITORS

The Lake Ontario waterfront is tremendously important to many people as a place to visit. In addition to the enjoyment of simply being at the water's edge, waterfront visitors can enjoy many parks, marinas, boat launches, lookouts, campsites, beaches, trails, boardwalks and other cultural, tourist and recreational places and events (see Map 7). These amenities attract not only local residents, but also visitors from farther afield.

Tourists are now a major economic force in some waterfront communities, and have the potential to bring a significant growth in economic benefits, as well as the challenges of managing larger numbers of visitors.

In 1992, there were some 35 million person-trips into waterfront municipalities for a variety of non-work activities. The number of these non-residents who actually visit the waterfront during their stay is unknown, but the *Waterfront Trail User Study*, carried out at four waterfront sites in 1993 for the Trust, found that while most Trail users are from nearby neighbourhoods, a quarter came from more than 10 kilometres away from the waterfront. For major waterfront attractions such as Ontario Place, Harbourfront, or Presqu'ile Provincial Park, the ratio of visitors from beyond the local area is undoubtedly considerably higher.

The responses provided by current waterfront users to the trail survey give some sense of the appeal of the waterfront setting. Of the trail users surveyed about their reasons for using the Trail:

- over 85% cited "pleasure-recreation";
- almost 75% indicated "health and physical training";
- about 60% said "scenery-natural environment"; and
- about 25% indicated "social-family outing".

If a similar survey were carried out for boaters, or for shoppers at Queen's Quay Terminal, or for picnickers on Toronto Island, the motivating factors might differ somewhat. But the recognition of the waterfront as a special place on the edge of an inland sea, as a source of inexpensive recreation fairly close to home, and as a location for a diverse array of natural and cultural attractions, would almost certainly apply to all users.

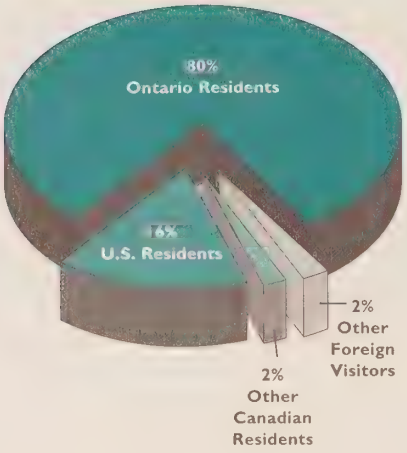
Using the same waterfront appeal to enhance the Greenway as a destination area for tourists requires an understanding of tourism markets and trends on a broad scale.

In general terms, the current visitor destinations within the Lake Ontario Greenway can be divided into three broad categories:

- central Toronto waterfront with its mass attractions;
- other urban waterfronts with attractions and green spaces mainly designed for passive use;
- rural waterfronts with small communities and occasional parks.

Peter Simon, City of Toronto

Promenading along Queen's Quay, Toronto



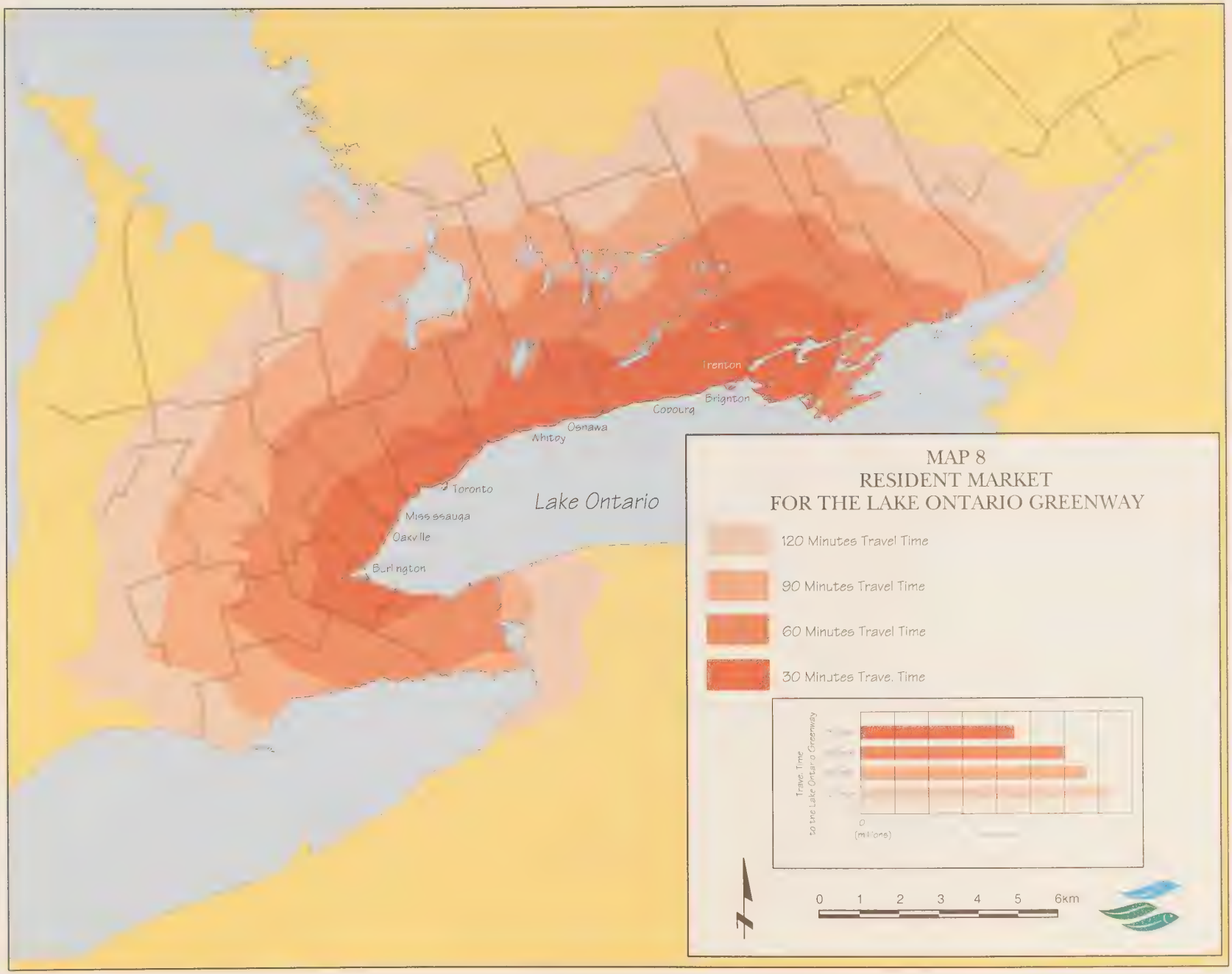
Origins of waterfront visitors

The length of stay of visitors varies considerably with their origins:

- Ontario residents, who make up 80% of non-work visitors, usually return home from waterfront communities the same day, with less than 3% staying more than three nights;
- Other Canadians, who are about 2% of visitors, have an average stay of 4.5 days in waterfront communities;
- Visitors from the United States account for 16% of the visitor market; 70% of these stay in Ontario (not necessarily solely in waterfront communities) from one to three nights;
- Other foreign visitors make up 2% of visitors, and typically stay in Ontario (not necessarily solely in waterfront communities) for much longer, with half staying more than 17 nights.

Some 875,000 people live within three kilometres of the waterfront. As shown on Map 8, the resident population expands rapidly for various drive times, with 4.5 million within a half-hour drive and 7.3 million within a 2-hour drive. While most waterfront visitors currently come by car, there is a choice of transportation modes to access many parts of the Greenway, including public transit in larger centres and the GO Transit system from Burlington to Oshawa.


METROPOLITAN TORONTO
PEEL
DURHAM
NORTHUMBERLAND
Oshawa Harbour
Toronto Harbour
Wellers Bay
Hamilton Harbour
Lake Ontario
MAP 7
TOURISM RELATED FACILITIES
Areas with Waterfront Accommodations
Harbours/Ports
Oak Ridges Moraine
3+ 1-2
Marinas
Niagara Escarpment
Campgrounds
Regional/County Boundary
Municipal Boundary
0 5 10 15 km
Source: Government of Ontario 1994, Accommodations '94 and Camping '94


Trenton
Brighton
Cobourg
Oshawa
Whitby
Toronto
Mississauga
Oakville
Burlington
Lake Ontario
MAP 8
RESIDENT MARKET
FOR THE LAKE ONTARIO GREENWAY
120 Minutes Travel Time
90 Minutes Travel Time
60 Minutes Travel Time
30 Minutes Travel Time
Travel Time to the Lake Ontario Greenway
0
(millions)
0 1 2 3 4 5 6km

CHALLENGES AND OPPORTUNITIES

Through the course of the Royal Commission's work, subsequent public hearings and meetings sponsored by the Waterfront Regeneration Trust, the deliberations of six workgroups, and the consultations to date about proposals for the Lake Ontario Greenway Strategy, a number of issues have come forward repeatedly. While these issues do not affect every waterfront location, they do recur in all sections of the waterfront. They provide the central set of challenges which this Strategy addresses, and the central cast of opportunities where progress can be made.

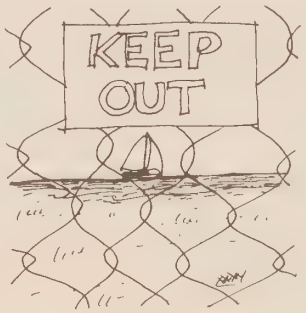
Access to the shore

Most people who live in or near the Greenway want to protect or increase their access to the shore. For many people, the ability to walk near the water's edge is a priority; for others, a priority is access at reasonable cost for boating, or the freedom to swim or windsurf without curtailment by beach postings. For many people, visual access to the water is an important factor – they are disturbed to see the lake being "walled off" by too many buildings.

In many parts of the waterfront, private property limits opportunities for public access, and many municipalities have responded with policies to require new waterfront developments to provide at least some access opportunities.

In some places, conflicts with transportation corridors limit visual (and sometimes physical) access to the lake. This is a major issue in Toronto's central waterfront, but similar concerns about the barrier effects of busy roads or rail corridors can be found in parts of Burlington, in the Port Union area of Scarborough, and in parts of Port Hope, Cobourg, and Trenton. Transportation links need to be designed to reduce barriers to the lake, and to provide alternate means to private automobiles, such as transit and bicycling, for people to visit the Greenway.

An accessible shoreline involves more than being able to walk to the water's edge. Degraded water quality, which limits fishing, windsailing or swimming, is also a barrier to access for significant groups of waterfront users. Equality of access is another important aspect of this challenge. The waterfront should be increasingly accessible to user groups of diverse ages, ethnicity, personal abilities, and incomes.



Reversing environmental degradation

Consistently, people say that simply protecting what remains along the waterfront is not enough – we need to move beyond protection into actively reversing past damage. This need is perhaps most strongly expressed about water quality, and elements closely related to water quality such as the edibility of Lake Ontario fish. While considerable progress has been made on a whole-lake basis, that progress is often not clearly evident in the near-shore areas that continue to have visible pollution problems.

Among the places where environmental degradation is most evident are the former waterfront industrial sites where contaminated soils and/or groundwater are factors that sometimes delay or stalemate re-development activities. These sites illustrate well the interconnected nature of waterfront issues – certainly they are environmental problems, but while they sit idle or require expensive remediation, they quickly become economic concerns as well. In many cases, they also hinder a community's plans for waterfront renewal. While the greatest concentration of sites with historic land uses of concern is in Toronto, they occur in communities from one end of the Greenway to the other. A few of these sites have been restored, and other projects are in the early planning stages, but much more needs to be done.

A third pressing environmental challenge relates to the progressive loss and fragmentation of natural habitats across the Greenway. As a result, many species have been lost in major sections of the waterfront, and many more are at risk. While a number of small-scale restoration projects are underway, they have only begun to address this problem.

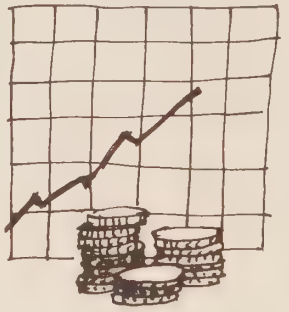
Economic renewal

The waterfront has long been a focus for employment, and communities and employers must adapt to changing markets and changing expectations to maintain that role. While water-dependent industries continue to be an important part of the economy, economic challenges are presented by the migration of traditional industries away from the waterfront and the increased competition to downtown cores from malls and superstores.

At the same time, these changes often create opportunities by freeing up sites near the water for other uses, and by prompting communities to chart a course that uses a revitalized, people-friendly waterfront as a lever for economic renewal. Encouraging private sector involvement in waterfront planning and stewardship is essential to its future.

In many cases, expanding tourism is seen as an important part of a renewal strategy. However, communities must grapple with how to create the necessary mass and quality of attractions to succeed in a very competitive tourism market, without reducing their own quality of life and sense of place.

Very often, that distinctive sense of place is an important part of the attraction for visitors as well. In the rush to modernize and to accommodate new businesses, communities can easily allow their individual distinctive character to gradually erode. The result can be a homogenous "geography of nowhere" which is of no interest to most visitors. Communities also need to understand the changing expectations and desires of potential visitors, and how to foster cooperation among neighbouring areas and agencies where competition has been a more frequent theme.



Guiding development

As Map 9 illustrates, a variety of large- and small-scale changes are taking place or being considered in many locations across the waterfront. Some of these represent significant changes in land use, such as the redevelopment of former industrial lands for housing, commercial and/or recreational uses; urban expansion into farmlands; or industrial development in rural landscapes. Others represent the revitalization of harbour areas, expansion of urban settlements, or infill in existing residential communities.

These developments present the challenge of ensuring that they occur in the most appropriate locations, respecting existing communities and environmental conditions. Often the most attractive setting for development is close to the water's edge, but this can result in the loss of physical and/or visual access, and can create future risks associated with shoreline erosion or flooding.

Some developments have already received approvals or are underway. Those that are still in the planning stages present opportunities for innovative approaches to location and design to address local environmental, economic and community needs. For example, public access to the waterfront can be improved, environmental restoration can be undertaken, and good design can create distinctive and enjoyable places.

Maintaining cultural values

As waterfront communities have changed over time, there have been widespread losses of cultural heritage resources and landscapes, divorcing many communities from their historic roots. These losses may be direct, such as the destruction of archaeological sites, historic buildings, bridges, streetscapes and other features. They may be the result of major physical changes in the landscape, for example by placing large scale buildings and widening streets adjacent to heritage structures, or by building electrical transmission towers within a scenic rural setting. The changes can also be more subtle. Often, unexpected cultural changes occur when rapid development brings residents with a new set of values into an area.

Allowing new development to proceed without careful consideration of existing cultural landscapes may mean that community identity and distinctiveness are diminished, links to the past are severed, and places lose some of the very qualities that make them attractive places to visit or live.

Improving decision-making

Part of the reason to move to an ecosystem-based planning approach is the clearly recognized need to improve decision-making processes. While recent initiatives such as Planning Act reform are underway, the challenge for many regulatory agencies and communities is to reach beyond traditional narrow mandates and to foster joint decisions that are more holistic and more timely. The degree of frustration with our present uncoordinated, fragmented system of responsibilities is palpable, both inside agencies and without.

The Waterfront Regeneration Trust and other agencies have begun to bring people and programs together in round-table settings, to provide mediation where appropriate, and to foster other creative ways to improve decision-making. However, other reforms are needed as well, especially in the overlapping layers of regulatory approvals governing changes along the water's edge.

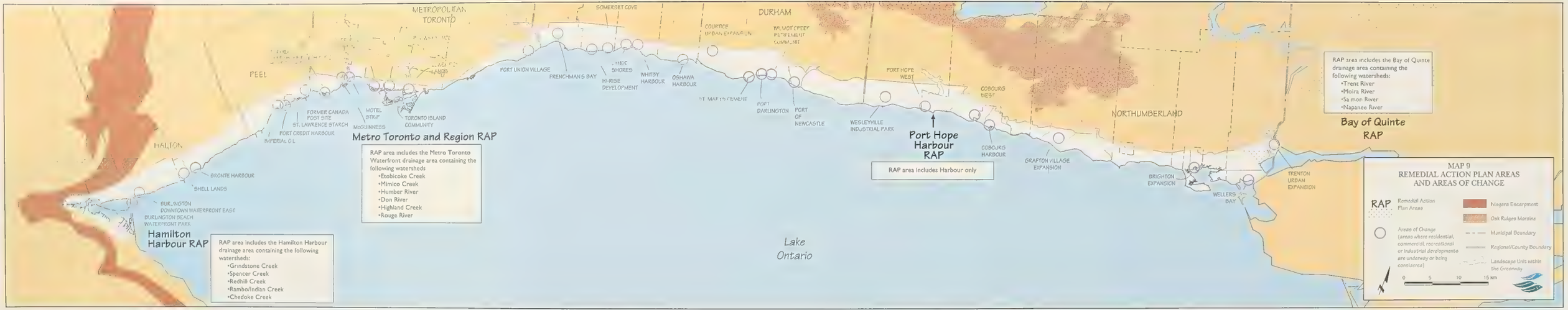
There is a need to recognize that the art of ecosystem-based planning is in a developing stage, with considerable scope for innovation and improvements. The process of breaking down artificial barriers, recognizing the connections among decisions, and considering indirect and cumulative effects must become a part of future decision-making.

Balancing competing objectives

A frequently-heard refrain is the need to balance competing objectives for the waterfront, so that as many demands as possible can be met. Providing unlimited public access, for example, can all too easily result in sensitive natural habitats and quiet communities being over-run with visitors.

The danger, in part, is trying to meet every need everywhere along the waterfront. The challenge is creating a future waterfront that maintains its health and diversity by enhancing facilities for human visitors in some areas, enhancing habitats for other life in some areas, and enhancing opportunities to live or work in others. Reaching agreement on how this diversity is allocated, and designing with nature so that the environmental priorities of the waterfront are respected, are no small tasks.

In addition, each community will need to weigh its waterfront priorities against other important community needs, whether they are aging infrastructure, or health care facilities, or schools and police. This challenge of competing priorities, which is always at the heart of municipal government, is made more difficult by limited financial resources and fiscal restraint at all levels. Overcoming this challenge will require ensuring that waterfront projects bring a good return to the community, and planning creatively to achieve their implementation in an affordable fashion.


METROPOLITAN TORONTO
PEEL
HALTON
DURHAM
NORTHUMBERLAND
SOMERSET COVE
COURTICE URBAN EXPANSION
WILMOT CREEK RETIREMENT COMMUNITY
PORT UNION VILLAGE
FRENCHMAN'S BAY
HIGHLAND SHORES HI-RISE DEVELOPMENT
WHITBY HARBOUR
OSHAWA HARBOUR
ST. MARYS CEMENT
PORT DARLINGTON
PORT OF NEWCASTLE
WESLEYVILLE INDUSTRIAL PARK
PORT HOPE WEST
COBOURG WEST
COBOURG HARBOUR
GRAFTON VILLAGE EXPANSION
BRIGHTON EXPANSION
WELLERS BAY
TRENTON URBAN EXPANSION
FORMER CANADA POST SITE
ST. LAWRENCE STARCH
PORT CREDIT HARBOUR
IMPERIAL OIL
MOTEL STRIP
McGUINNESS
TORONTO ISLAND COMMUNITY
BRONTE HARBOUR
SHELL LANDS
BURLINGTON DOWNTOWN WATERFRONT EAST
BURLINGTON BEACH WATERFRONT PARK
Metro Toronto and Region RAP
RAP area includes the Metro Toronto Waterfront drainage area containing the following watersheds
•Etobicoke Creek
•Mimico Creek
•Humber River
•Don River
•Highland Creek
•Rouge River
Hamilton Harbour RAP
RAP area includes the Hamilton Harbour drainage area containing the following watersheds:
•Grindstone Creek
•Spencer Creek
•Redhill Creek
•Rambo/Indian Creek
•Chedoke Creek
Port Hope Harbour RAP
RAP area includes Harbour only
Bay of Quinte RAP
RAP area includes the Bay of Quinte drainage area containing the following watersheds:
•Trent River
•Moira River
•Salmon River
•Napanee River
Lake Ontario
MAP 9
REMEDIAL ACTION PLAN AREAS AND AREAS OF CHANGE
RAP Remedial Action Plan Areas
Areas of Change (areas where residential, commercial, recreational or industrial developments are underway or being considered)
Niagara Escarpment
Oak Ridges Moraine
Municipal Boundary
Regional/County Boundary
Landscape Units within the Greenway
0 5 10 15 km

Chapter three

The Waterfront of the Future

Wayne DeVeau, Town of Cobourg

Cobourg Waterfront Promenade

Landplan Collaborative

Port Britain, Hope Township

To achieve the vision of the waterfront of the future, concerted action by a wide range of individuals and agencies is necessary. Fostering the necessary commitment to those actions is the goal of the Greenway Strategy. The scope of actions is guided by the nine principles established by the Royal Commission on the Future of the Toronto Waterfront, and broadly endorsed and supported by citizens and governments – that the waterfront of today and tomorrow should be clean, green, accessible, connected, open, useable, diverse, affordable and attractive.

Those principles are embodied in five objectives for the Greenway Strategy. Using an ecosystem approach that recognizes the dynamic nature of the waterfront, the Strategy is intended to:

1. protect the physical, natural and cultural attributes associated with the Lake Ontario Greenway;
2. identify restoration needs and methods and encourage landowners, communities and agencies to undertake regeneration activities;
3. promote greater awareness, understanding and recreational use of the waterfront and encourage community pride and participation in its regeneration;
4. promote economic activities and employment on the waterfront that are compatible with other Greenway objectives; and
5. foster cooperation in cost-effective public and private initiatives by reducing jurisdictional gridlock, sharing resources, and coordinating waterfront activities.

To achieve each of these objectives, specific actions are underway and planned in various parts of the Greenway.

Within each of the actions described below, a variety of steps already taken by the Waterfront Regeneration Trust, municipalities and other agencies or community groups are described as examples of progress to date. These examples are not intended to be comprehensive, but rather to illustrate what is already being done in various places. Responsibility and mechanisms for steps to come are outlined more fully in Chapter Four, Implementation.

A number of documents that can be used to help accomplish the actions are listed in Appendix D. They include a bibliography of studies and background reports, as well as a toolkit with research results, guidelines, and methods compiled by the Lake Ontario Greenway Strategy workgroups in cooperation with a range of partners.

OBJECTIVE 1

Protect the physical, natural and cultural attributes associated with the Lake Ontario Greenway

The first priority in regenerating the waterfront must be to protect its current values from further deterioration. While the cumulative effects of a wide range of stresses from past uses of the waterfront and its tributaries have been significant, the waterfront of today still embodies many physical, natural and cultural elements of value. Protecting these elements provides a base for future progress.

Action 1.1:
Protect significant coastal features and habitats

Understanding the physical processes at work along the Lake Ontario shoreline is fundamental to its management. As well as influencing human uses of the waterfront, these processes determine the aquatic habitats present along the shore, and closely relate to the fish communities and other wildlife found there.

Examples of progress to date:

- As outlined in Chapter Two, the Shoreline Management Workgroup has developed a descriptive model of the physical processes affecting the shoreline, described the role of various shoreline types as fisheries habitat, and outlined management approaches for nine defined shoreline units.
- Through the Remedial Action Plan programs underway in Hamilton, Toronto, Port Hope, and the Bay of Quinte, a more detailed assessment of aquatic habitat has been undertaken, together with an analysis of the relationship between impaired water and sediment quality and fish and wildlife health. Within the RAP areas, key habitat areas for protection and/or rehabilitation have also been identified.
- Development of an Integrated Shoreline Management Plan is underway for the waterfront area from Tommy Thompson Park to Frenchman's Bay, with the involvement of MTRCA, municipalities, local residents, and the Waterfront Regeneration Trust. Terms of reference developed for this process can serve as a model for other shoreline units.

To achieve this objective, a number of actions are planned or underway:

- **1.1 Protect significant coastal features and habitats.**
- **1.2 Protect waterfront natural core areas.**
- **1.3 Protect bioregional habitat corridors and connections.**
- **1.4 Protect water quality from further deterioration.**
- **1.5 Protect places of archaeological, historic or cultural significance.**

Integrated Shoreline Management Plans should:

- encompass at a minimum the inland regulatory shoreline as defined by MNR and offshore waters to a depth of 10 metres, as well as any significant shoreline ecological features extending beyond these areas;
- map in detail the coastal processes acting within the unit;
- identify source areas of littoral transport to sustain dynamic beaches and wetlands with barrier beaches;
- identify key fish habitats and needs for cold and warmwater fish communities, and direct fish habitat mitigation and enhancement measures to the most appropriate locations;
- identify the cumulative effects of past shoreline changes, and discuss the capacity of the shoreline to absorb further change;
- determine the acceptability and design parameters of significant proposed shoreline/onshore alterations, such as lakefill or major shoreline protection works;
- assess the most cost-effective techniques for flood and erosion control where necessary, (including such non-structural techniques as setbacks and clustered development);
- incorporate other shoreline objectives such as public access, protection and enhancement of natural habitats and corridors, and establishing public open space or parkland;
- investigate ways to coordinate the renewal or installation where necessary of shore protection works on individual lots, so that joint projects can achieve cost-effectiveness and ecological benefits;
- incorporate any other specific objectives identified for individual shoreline units, as outlined in the companion document *Lake Ontario Greenway Strategy: Next Steps*;
- establish monitoring programs to assess future changes.

Sample terms of reference for ISMPs are included in the toolkit.

Landplan Collaborative

Bond Head Bluffs, Clarington

Steps to come:

- Integrated Shoreline Management Plans (ISMPs) should be developed for shoreline units (see Map 3) to apply the coastal processes model at a local scale, to integrate the plans and actions of various agencies along the waterfront, and to improve future shoreline management practices to provide ecological and recreational benefits, as well as long term cost effectiveness. In the case of very large shoreline units, ISMPs could be developed for several sub-sections, based on differences in shoreline character or littoral drift. ISMPs should be completed in advance of consideration of major shoreline changes such as new harbours, lakefills, or extensive shore protection.

- As part of future shoreline or fishery management planning along the Greenway, the existing and potential habitat values of open wave-washed coast for coldwater pelagic fish should be protected, especially in areas with convex bedrock or cohesive cobble boulder substrates. Shoreline structures or mitigation projects in these areas should be designed to maintain or enhance coldwater habitat values.

- Existing warmwater fish habitat along the shoreline should be protected and enhanced, with enhancement efforts aimed at areas which have the greatest potential for linkages with other warmwater habitats.

- Aquatic nearshore habitats such as shallow waters and wetlands should be recognized as vital connecting links for movement of many fish and wildlife species including birds, amphibians, reptiles and mammals. Both the alongshore habitat connection and the ability for fish to move between deep and shallow water, including access to stream corridors, should be protected from disruption.

- Significant coastal features, such as large dynamic sand beach and dune systems and bluffs, and representative examples of natural shoreline types such as shale bedrock should be protected as natural core areas. Any works or land use changes along the shoreline should respect shoreline processes.

- Standardized data collection protocols should be established among various agencies with a management role along the waterfront, so that future data are comparable, and so that priority data needs, especially regarding coldwater fish use of the waterfront, are met (see Action 5.4).

Related implementation mechanisms in Chapter 4: A.1, A.2, A.5, A.6

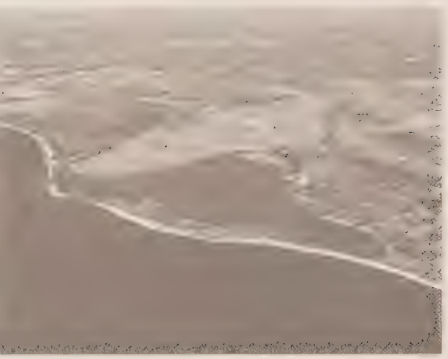
Action 1.1

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust
Ecosystem Approach to Shoreline Treatment (EAST) Workshop Proceedings
Shoreline Management Workgroup Report
Demonstration Terms of Reference for an Integrated Shoreline Management Plan
Guide to Shoreline Approvals for Landowners
Checklist for Shoreline Treatment

Ontario. Ministry of Natural Resources. 1994.
Fisheries Guidelines for Developing Areas

Ontario. Ministry of Municipal Affairs. 1994.
Comprehensive Set of Policy Statements



Landplan Collaborative

Oshawa Second Marsh and
McLaughlin Bay Wildlife Reserve

Action 1.2:
Protect waterfront natural core areas

As outlined in Chapter Two, natural core areas include the most valuable terrestrial ecological sites along the waterfront and are vital to the protection of flora and fauna populations. While the knowledge base on natural habitats along the waterfront is less than perfect, most of the significant habitats from a waterfront-wide regional perspective can be identified for protection.

Examples of progress to date:

- Of the 90 natural core areas identified along the waterfront (see Map 10 and Appendix A), 47 are totally or largely in public ownership; 42 have been classified as provincially significant wetlands or ANSIs; and 64 are included in some form of protective designation within local Official Plans. Most regional Official Plans also include some form of protective recognition for natural core areas. Halton Region has had an Ecological and Environmental Advisory Committee to advise Council on natural area protection since 1976.

- Landowner contact programs to encourage private landowners to protect significant habitats in parts of the Greenway have been initiated by Halton Region, the Lower Trent Region Conservation Authority and the Hamilton Harbour RAP.

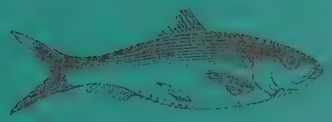
- The dedication of locally-based interest groups has been of great benefit in the protection of many waterfront natural core areas, including Rattray Marsh, Second Marsh, Tommy Thompson Park, the Rouge Valley, Lynde Creek, and Thicksons Woods.

- The Great Lakes Wetlands Conservation Action Plan is a cooperative effort among government and non-government interests to conserve and restore wetlands of the Great Lakes. Under this plan, a list of priority sites for securement is being developed along with specific strategies to protect these sites.

Steps to come:

- Additional natural core areas or other natural areas of local value may be identified by waterfront municipalities or conservation authorities on the basis of improved information. The significance of additional areas should be evaluated using clear selection criteria, such as those outlined in *A Natural Heritage Strategy for the Lake Ontario Greenway* (in the toolkit). While these criteria were established at an earlier date and are oriented specifically to a waterfront setting, they correspond closely to the definitions of significance in the *Comprehensive Set of Policy Statements.*


HALTON
PEEL
METROPOLITAN TORONTO
DURHAM
NORTHUMBERLAND
SCARBOROUGH BLUFFS
ROUGE-DUFFINS CORRIDOR
PICKERING BLUFFS
GAGE CREEK
SPICER-LAKEPORT CORRIDOR
- Maintain fish habitat
Protect alongshore links
- Enhance coldwater habitats offshore and in streams
- Enhance warmwater habitats in bays and river mouths
- Shoreline projects should serve to enhance both cold and warmwater habitats
- Increase shoreline wetlands near river mouths
- Improve warmwater and coldwater habitat connections
- Improve knowledge base
- Protect or enhance coldwater habitats along shore
- Protect linkages with coldwater tributaries
- Protect warmwater/coldwater habitats
- Protect habitat connections
Lake Ontario
MAP 10
NATURAL HERITAGE SYSTEM AND AQUATIC OBJECTIVES
Natural Core Areas and Corridors
Restoration Areas Proposed or Underway
Lake Iroquois Shoreline
Oak Ridge
Municipal Boundary
Regional/County Boundary
Landscape Units Within the Greenway
0
5
10
15 km



Rouge Park: Preserving a Rich Heritage

The Rouge Valley is an exceptional part of the Bioregion – a major valley on the edge of Metro Toronto that remains mostly forested, with many associated natural and cultural features. It provides the healthiest remaining forest habitats within Metro Toronto, including areas of interior forest that support Scarlet Tanager, Wood Thrush, and other birds of the deep woods. It has an excellent lakeshore marsh, and a beach strand habitat with coastal species that are rare elsewhere in the Greenway. The lower Rouge hosts more than 750 plant species, 123 types of breeding birds, and 55 kinds of fish.

Some of the bluffs along the river expose glacial deposits from before the last ice age, a geological record of great scientific interest. The Rouge area is rich in other forms of history as well, with the only known archaeological site from the Seneca nation, one of the Iroquoian peoples of the late 17th century. The pattern of farmlands, building architecture, and mill sites reflects the heritage of the Mennonite and British families that settled around the valley two hundred years ago.

Responding to strong concerns about threats to this rich heritage, the Province announced in 1994 that the Rouge would become the largest park within an urban area in North America, eventually including more than 4800 hectares. The federal and provincial government each contributed $10 million for acquisitions, capital projects and regeneration activities. Lands owned by the Metro Toronto and Region Conservation Authority (MTRCA), the Province, and other public agencies, within and around the lower valley south of Steeles Avenue, become part of the Rouge Park immediately, with the uses set out in an approved management plan. Corridors of valley land extending north to the headwaters of the Rouge in the Oak Ridges Moraine will be added to the park in future by public acquisition or through agreements with private landowners.

Park management will be coordinated by a Rouge Watershed and Park Council, with representatives from the provincial government, MTRCA, all the watershed municipalities, Save the Rouge Valley System Inc. (SRVS), and other citizen groups. Cooperative management activities will emphasize restoration of large blocks of forest and protection of heritage features, with a vital role for volunteers.

These approaches to management are designed to achieve the vision for the Rouge Park:

> "The Rouge Park will be a special place of outstanding natural features and diverse cultural heritage in an urban-rural setting, protected and flourishing as an ecosystem in perpetuity. Human activities will exist in harmony with the natural values of the park. The park will be a sanctuary for nature and the human spirit."

- Waterfront natural core areas not currently protected should be given high priority with a range of mechanisms including planning designations, stewardship, and acquisition. Protection techniques should incorporate a buffer of adjacent lands, with a width adequate to protect natural features and processes from adjacent land uses.

- Additional landowner contact and stewardship programs are needed to encourage landowner participation in protecting and restoring a broad range of natural areas, including those in urban areas.

- Provincial parks and other public lands which include the most outstanding natural core areas should have approved management plans in place quickly to guide future management, and should be encouraged to discontinue conflicting activities such as waterfowl hunting.

Related implementation mechanisms in Chapter 4: A.1, A.6, B.2, B.3, C.2

Robert Merrick, Waterfront Regeneration Trust

Gage Creek, Port Hope

ACTION 1.2

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust. 1995. *A Natural Heritage Strategy for the Lake Ontario Greenway*

Brownell, V. 1993. *Waterfront Natural Areas. Part I: An Overview of Natural Areas along the Lake Ontario Waterfront from Burlington to Trenton*

Brownell, V. 1993. *Waterfront Natural Areas. Part II: A Biological Inventory and Evaluation of 28 Natural Areas along the Lake Ontario Waterfront from Newcastle to Trenton*

Hilts, S., and R. Reid. 1993. *Creative Conservation: A Handbook for Ontario Land Trusts*

Ontario. Ministry of Municipal Affairs. 1994. *Comprehensive Set of Policy Statements*

Action 1.3:
Protect bioregional habitat corridors and connections

Regeneration of the waterfront cannot take place in isolation from the remainder of the Bioregion. Many species of fish and wildlife spend only part of their life cycle within the Greenway; frequent local extinctions in fragmented habitats (especially within urban areas) must be countered by re-colonization from habitat connections; and the re-population of new or restored habitats depends on these bioregional connections.

Examples of progress to date:

- Most of the 35 valleys identified as significant corridors (see Map 10 and Appendix A) are partially protected through conservation authority ownership and flood and hazard regulations, and through increasing municipal recognition of their natural values. Valleys are also identified for protection through the Provincial *Comprehensive Set of Policy Statements.*

- The protection of significant habitat blocks and corridors in headwater areas has been partially addressed through the Niagara Escarpment Plan and the Oak Ridges Moraine Strategy.

Steps to come:

- The critical importance of bioregional habitat corridors connecting to the Greenway should be fully recognized through municipal planning documents and any future Provincial greenlands initiatives. Of particular significance are the woodlands, wetlands, and source areas associated with the former Lake Iroquois shoreline, which provide vital regional connections in many places where the current waterfront has little habitat remaining. As well, the importance of habitat connections within the Oak Ridges Moraine should be fully recognized in provincial policies for that landscape feature.

- The ecological values, particularly habitat linkage values, of the valley and forest corridors identified within and adjacent to the Greenway should be recognized and protected in future planning documents and in watershed plans. Where they occur, existing east-west habitat corridors should be protected and strengthened, including natural habitats associated with:

  - Scarborough Bluffs
  - Rouge-Duffins wildlife restoration corridor
  - Bond Head Bluffs
  - Gage Creek Marsh-Carr Marsh
  - Spicer to Lakeport forest corridor
  - Salem-Presqu'ile-Carrying Place forest/wetland corridor

ACTION 1.3

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust. 1995.
A Natural Heritage Strategy for the Lake Ontario Greenway

Ontario. Ministry of Municipal Affairs. 1994.
Comprehensive Set of Policy Statements

Oak Ridges Moraine Technical Working Committee. 1994.
The Oak Ridges Moraine Area Strategy for the Greater Toronto Area

- In the urban sections of the Greenway from Burlington to Oshawa, natural habitats have been so depleted that almost any remnant is of value to resident wildlife and as a "stepping stone" for migrant species. All these remaining natural woodlands and other habitats within the urban fabric should be protected.

- Any future waterfront projects should recognize in their design the significance of the lake littoral zone as a habitat corridor for the movement of pelagic fish and for the dispersal of warmwater fish, reptiles and amphibians, and other wildlife.

Related implementation mechanisms in Chapter 4: A.1, A.4, B.3

Action 1.4:
Protect water quality from further deterioration

As outlined in Chapter Two, considerable progress has been made in the past two decades in curtailing pollution problems along the waterfront, but aquatic ecosystem health remains a significant concern. Protecting water quality from further deterioration is an important part of a broader effort to restore beneficial uses in the lake.

Examples of progress to date:

- Several programs of the provincial and federal governments, under the umbrella of the Great Lakes Water Quality Agreement and the Canada-Ontario Agreement, have made considerable progress in reducing lake-wide loadings of nutrients and toxic chemicals. Further steps needing immediate implementation have also been identified, such as those needed to achieve the goals of the Lake Ontario Toxics Management Plan.

- The protection of headwater source areas to maintain surface water quality and quantity in tributaries feeding into the waterfront has been incorporated as part of both the Niagara Escarpment Plan and the Oak Ridges Moraine Strategy. Protection of these areas is an essential foundation for regeneration of both the watercourses and the waterfront itself. Mechanisms to implement the Oak Ridges Moraine Strategy are under discussion; they are vital to the future health of the Bioregion.

- Watershed and subwatershed plans which will assist in protecting future water quality in tributaries are underway in a number of watersheds, including Sixteen Mile Creek, Credit, Humber, Don, Rouge, Oshawa, Harmony/Farewell and Ganaraska.

Steps to come:

- Watershed and subwatershed plans should be developed throughout the Bioregion to ensure that development and land use activities do not further increase pollutant loadings to tributaries and ultimately to Lake Ontario waters. Even in advance of these comprehensive plans, best management practices for stormwater and for agricultural activities should be implemented. Priority in developing subwatershed plans should be given to:

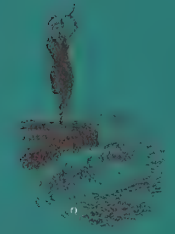
  - areas of imminent land use change in newly-developing areas, where these plans should be required as a pre-condition to Official Plan amendments;

  - areas where water quality monitoring programs have identified impairment problems.

- Improvements to the process of developing subwatershed plans should be examined, to streamline the process and make it more cost-efficient.

Halton Region Conservation Authority

Sixteen Mile Creek, Milton



Warning! Swim At Your Own Risk

Along the Lake Ontario Greenway there is a new twist on an old saying: "You can lead a cyclist to water but you can't let him swim." A refreshing dip in the lake is a delight on a hot summer day. Unfortunately, our beaches are sometimes posted during the summer because the treatment plants cannot cope with the high levels of combined storm-water and sewage. The combined sewer overflows (CSOs) spill untreated into the lake and the familiar "Warning: polluted waters" signs go up.

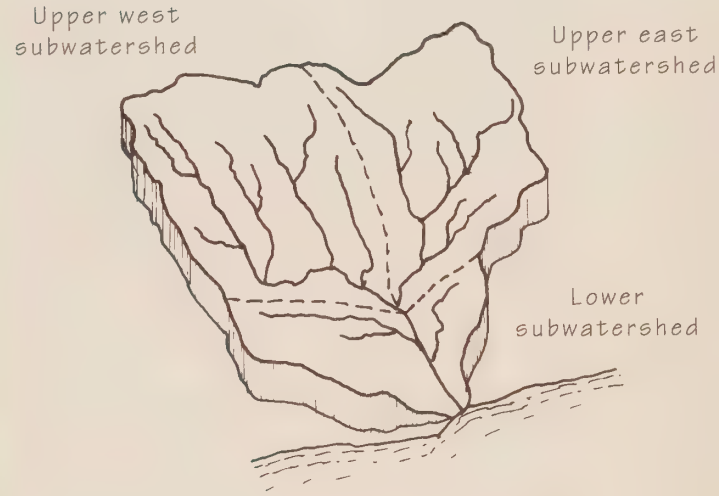
The Eastern Beaches of Toronto were once plagued by CSOs. In the heat and humidity frustrated residents and visitors attracted to the lake could only stare at the inviting water. But swimmers now have something to look forward to since the City's Department of Public Works and the Environment completed construction of two underground detention tanks. The idea is to catch CSOs before they reach the lake and store them until the Main Sewage Treatment Plant at Ashbridge's Bay can handle them.

These detention tanks were constructed in two phases. The first tank, buried under park land at the foot of Kenilworth Avenue in 1990, reduced the amount of bacteria and other pollutants entering the lake. This greatly improved water quality in the nearshore areas of Woodbine Beach and Beaches Park. CSOs, however, continued to be discharged into the lake to the east forcing all area beaches to close after periods of heavy rain.

In 1994, a second detention tank was constructed under the beach at the foot of McLean Avenue. This helped to improve nearshore water quality at Kew and Balmy Beach, and other beaches to the west. A monitoring programme revealed that bacteria levels exceeded provincial standards only once at Woodbine Beach during the summer of 1994. This compares to sixteen occurrences of excessive levels in 1989.

The Eastern Beaches detention tanks have the capacity to prevent CSO discharges after all but the heaviest rainfalls, which typically occur once a year. Though the "Warning" signs have not been permanently retired, the City of Toronto has taken two important steps toward improving the health of Lake Ontario and ending the frustration of hot summer visitors. There has never been a shortage of bathing suits on the Eastern Beaches; now it's a safe bet that many of them will actually get wet.

- Continued efforts are needed to reduce sediment and pollutant loadings from agricultural areas and developing areas, through incentive programs and landowner contact programs affiliated with the Remedial Action Plans or with provincial programs such as Clean Up Rural Beaches (CURB).



Watershed and subwatersheds

- Integration of monitoring programs of the biota (fish, fish-eating birds, etc) of both the nearshore and open lake should be supported and encouraged as an ecologically-sound way to detect emerging contaminant problems at an early stage and to measure the effectiveness of remedial actions underway.

Related implementation mechanisms in Chapter 4: A.1, A.2, A.4, A.5, C.1, C.2.

Robin Powell

Humber River

Action 1.4 sources of additional information:

Metro Toronto and Region Remedial Action Plan. N.d. *Clean Water, Clear Choices: Recommendations for Action*

Ontario. Ministry of Environment and Energy. 1994. *The Niagara Escarpment Plan*

Ontario. Ministry of Environment and Energy, and Ontario. Ministry of Natural Resources. 1993. *Integrating Water Management Objectives into Municipal Planning Documents*

Ontario. Ministry of Environment and Energy, and Ontario. Ministry of Natural Resources. 1993. *Water Management on a Watershed Basis: Implementing an Ecosystem Approach*

Ontario. Ministry of Environment and Energy, and Ontario. Ministry of Natural Resources. 1993. *Subwatershed Planning*

Ontario. Ministry of Environment and Energy. 1994. *Stormwater Management Practices Planning and Design Manual*

Ontario. Ministry of Environment and Energy. 1985. *Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters*

Ontario. Ministry of Natural Resources. 1994. *Fisheries Guidelines for Developing Areas*

Canada. Environment Canada. 1993. *Lake Ontario Toxics Management Plan*

Metropolitan Toronto and Region Conservation Authority. Don Watershed Task Force. 1994. *Forty Steps to a New Don*

Action 1.5:
Protect places of archaeological, historic and cultural significance

The rich and diverse cultural heritage of the Lake Ontario waterfront provides a link to the past, a sense of continuity for present communities, and a source of meaning for interpretive and educational programs. Places of significance in today's landscape reflect the history of human activities in the past, as well as cultural activities in the present.

Archaeological sites along the shore provide insights into our cultural heritage

Examples of progress to date:

- Some 577 registered archaeological sites along the Greenway have been recorded and mapped in the provincial data base; a total of 541 historic structures have been designated by municipalities under the provisions of the Ontario Heritage Act.

- In recent years, the retention of historic structures for sympathetic modification or adaptive re-use has become increasingly common. Examples include the use of the Adamson Estate in Mississauga by the Royal Conservatory of Music, and the use of Victoria Hall in Cobourg and Haldimand Township Hall in Grafton for municipal purposes.

- Through the background report *Settling the North Shore*, 203 cultural heritage landscapes have been identified and mapped, illustrating human activities or traditions prior to 1950.

- At least 32 cultural venues, where current fairs, festivals, shows, concerts and theatre productions occur, have been identified within the Greenway.

Lynde Creek–An Ancient Gathering Place

We tend to associate the origins of the waterfront's cultural diversity with the arrival of the first European settlers over 300 years ago. In fact, people have been arriving on the North Shore from other parts of the continent for at least 10,000 years. At Whitby's Lynde Shores, the richness and diversity of the ecosystem would have offered a rich harvest of game and fish for early travellers.

The extensive cultural heritage recently unearthed near the estuary of Lynde Creek provides many valuable clues about who has lived on the waterfront since the last ice age. More significant perhaps, the discovery provides an understanding and appreciation of the relationship prehistoric cultures had with their environment. It also lends support to the archaeological exploration of other river and creek mouths that feed into Lake Ontario.

During the Late Paleo-Indian period, between 9,900 and 10,300 years ago, Whitby's shoreline was about 11 miles further south than it is today. Artifacts dating from this period suggest that seasonal camps were located near Lynde Creek on a ridge that might have been a path for Caribou traveling through the pine-dominated forest. For perhaps 2,000 years, until about 6000 B.C., the area was principally a place for hunting and gathering by aboriginals.

By the end of the Middle Archaic period (6000-2500 B.C.) the Lake Ontario shoreline was close to where it is today. Oak, elm, ash, maple, and beech had greatly increased their presence. People from the Midwest of the present-day United States were probably attracted by opportunities for hunting, gathering, and fishing, which eventually became a principal activity. Walleye, lake whitefish, Atlantic salmon, and trout likely populated the waters at different times of the year. Base camps were probably established near the creek's estuary to take advantage of the abundant plant and wildlife. The recovery of a large groundstone gouge, a tool used to build dugout canoes, provides a clue that native people stopped here for a while.

During the Woodland period (1000 B.C.-1650 A.D.), when pottery and corn agriculture were introduced by cultures south of the Great Lakes, native people preferred to settle on the creek's east bank. Since then the wetlands at Lynde Shores have changed little in appearance.

From the archaeological sites around the Lynde Creek estuary we get a glimpse of the North Shore's long and fascinating prehistory. Because the shoreline gradually moved a distance of 13 kilometres, we have learned from one place what people were doing inland over 10,000 years ago and at the water's edge 3,000 years ago. Our understanding of how cultures adapted to the changing environment of Lynde Shores not only expands our knowledge, it also influences our perceptions of and attitudes toward the natural world near the water's edge.

The mouths of creeks and rivers are obvious places to begin looking for prehistoric cultures. Artifacts have already been discovered near Sixteen Mile Creek in Oakville and Carruthers Creek in Ajax. When new development is proposed for the waterfront, required archaeological studies will reveal more buried cultural treasures from the past. We should not wait for such random opportunities. By unearthing significant aboriginal heritage sites well before urbanization threatens them, communities can take steps to promote and protect their heritage or ensure it is integrated into future land uses. The findings at Lynde Creek are an important step in the right direction.

Landplan Collaborative

Adamson Estate, Mississauga

- Several Greenway communities have approached the identification and conservation of cultural resources in a systematic way; examples include Scarborough's *Archaeological Facility Master Plan Study, Metro's Culture Plan, Regional Heritage Features on the Metropolitan Toronto Waterfront,* and Burlington LACAC's inventory and rating of historically significant structures. Most other municipalities address heritage conservation in a more general way through Official Plan policies.

- The *Greenway Interpretation Master Plan*, a background report, identifies opportunities along the Greenway for enhancing public awareness and understanding of cultural heritage places.

- A *Cultural Heritage Conservation Manual* is being prepared by the Ministry of Culture, Tourism and Recreation, the Ministry of Municipal Affairs, and the Waterfront Regeneration Trust, in conjunction with the revised Planning Act, *Comprehensive Set of Policy Statements*, and implementation guidelines. The Manual will provide assistance to agencies and groups undertaking cultural heritage surveys, evaluation, analysis, planning and conservation.

Steps to come:

- As required by the *Comprehensive Set of Policy Statements*, all municipalities should include a systematic assessment of heritage resources as part of the planning process preceding land use change.

- Programs should be established to identify, evaluate, and record archaeological sites and built heritage resources in standardized inventory methodologies, preferably through proactive approaches such as heritage master plans at the municipal level. Evaluation of the significance of individual sites should make use of the evaluation frameworks outlined in Chapter Two.

- In conjunction with local advisory committees and community heritage groups, municipalities should develop strategies to identify, protect, interpret, and celebrate meaningful heritage sites and structures. Where significant sites cannot be preserved, mitigation measures such as systematic data recovery, documentation, and monitoring should be required. Where they are preserved, adjacent development should not be allowed to impair their integrity.

- The identification and recording of underwater heritage sites (e.g. shipwrecks) along the Lake Ontario coast should be encouraged; where such sites cannot be protected from looting, their location should be kept confidential.

- The cultural heritage landscapes identified in *Settling the North Shore* should be analyzed by local communities to identify their values, and to develop planning and management guidelines based on those outlined in *Settling the North Shore*. New development or changes in land use within cultural heritage landscapes should conform to these guidelines to ensure that they reinforce rather than intrude upon the historic character of these areas.

Related implementation mechanisms in Chapter 4: A1, A3, B3, C2, C3

ACTION 1.5 SOURCES OF ADDITIONAL INFORMATION:

Ontario. Ministry of Culture, Tourism and Recreation, Ontario. Ministry of Municipal Affairs, and Waterfront Regeneration Trust. 1995.
Cultural Heritage Conservation: Manual (Draft)

Archaeological Services Inc., and Unterman McPhail Cuming Associates. 1995.
Settling the North Shore: Inventory of Cultural Heritage Resources of the Lake Ontario Greenway Strategy Study Area

Lord Cultural Resources Planning & Management Inc. 1995.
Lake Ontario Greenway Interpretation Master Plan

Ontario. Ministry of Culture, Tourism and Recreation. 1992.
MCC Archaeological Assessment and Reporting Technical Guidelines

Ontario. Ministry of Culture, Tourism and Recreation. 1991.
MGS-MCC Cultural Heritage Protocol

Ontario. Ministry of Culture, Tourism and Recreation. 1988.
Designation Handbook - Ontario Heritage Act

Ontario. Ministry of Culture, Tourism and Recreation. 1985.
Ontario Heritage Conservation District Guidelines

Weiler, J. 1980.
Guidelines on the Man-Made Heritage Component of Environmental Assessments

Ontario. Ministry of Municipal Affairs. 1994.
Comprehensive Set of Policy Statements

Metropolitan Toronto. 1994.
Metro's Culture Plan

Mayer, Pihl Poulton and Assoc. N.d.
The Archaeological Facility Master Plan Study of the North East Study Area

Reeves, W. 1992.
Metropolitan Waterfront Plan: Regional Heritage Features on the Metropolitan Waterfront

OBJECTIVE 2

Identify restoration needs and methods and encourage landowners, communities and agencies to undertake regeneration activities.

It is clear from the work of the Royal Commission that the people of the Greater Toronto Bioregion expect more than just protection of current waterfront values – they expect restoration of the waterfront to high levels of health and productivity. This restoration is no simple task, since the effects of environmental degradation along the waterfront are diverse and complex. Some effects are widespread, such as the caution on eating some types and sizes of fish caught in Lake Ontario; others are local, such as individual beach closures.

The need for restoration touches on all three of the overlapping circles of community, environment and economy that characterize the ecosystem approach. While pollution or habitat fragmentation are usually thought of first as environmental problems, the posting of a beach for health reasons on a summer weekend can have a major impact on traditional community activities. In places along the waterfront where past activities have contaminated soils and groundwater, the resulting clean-up costs can render future land uses uneconomic. In addition, many communities are discovering that an attractive and healthy waterfront can help attract new businesses, in contrast to the way that polluted waters and despoiled landscapes can discourage investors.

In addressing restoration needs, then, it is necessary to address a broad range of activities, and to set goals or targets for each wherever possible.

To achieve this objective, a number of actions are planned or underway:

- **2.1 Restore the supply of natural habitats that sustain biodiversity.**
- **2.2 Target restoration programs to priority habitat types.**
- **2.3 Restore natural shoreline structure and processes.**
- **2.4 Restore balance to Canada Goose populations.**
- **2.5 Restore degraded waters and sediments.**
- **2.6 Restore sites with contaminated soils or groundwater.**
- **2.7 Strengthen community identity and landscape character.**

Action 2.1:
Restore the supply of natural habitats that sustain biodiversity

Throughout much of the Greenway and the surrounding Bioregion, many types of natural habitats have been reduced by agriculture and urbanization to mere fragments. There is a wide range of opportunity and considerable community enthusiasm for restoring more tree cover and other natural habitats to the waterfront, but some direction and greater agency commitment are needed. Since many restoration techniques are experimental, the response of biological communities should be monitored and techniques modified over time if necessary.

Map 10 identifies areas where restoration projects are underway or recommended; more details are included in the companion document, *Lake Ontario Greenway Strategy: Next Steps.*

Examples of progress to date:

- A range of restoration methods for common habitat types are detailed in *Restoring Natural Habitats* in the toolkit. This manual emphasizes the need to take advantage of natural processes whenever possible, and to match restoration activities to individual site conditions, so that each project contributes to a diverse mix of habitats across the Bioregion.

- Most communities are involved to some degree in small-scale restoration projects, through parkland naturalization, tree-planting projects, wetland re-creation, or protection of naturally regenerating areas. As well as habitat renewal, many of these projects recognize the air quality benefits associated with increased tree cover.

- In some parts of the Greenway, private sector industries and community groups have been active in restoration projects, such as General Motor's involvement in habitat creation in the McLaughlin Bay Wildlife Reserve, and tree-planting in the Rouge valley by the citizen group 10,000 Trees for the Rouge.

Setting Targets for Wetlands

What is a reasonable share of the COA wetlands target to be identified within the Lake Ontario Greenway? At least four factors can be considered:

- **The coastline of the Lake Ontario Greenway represents approximately 15% of the Great Lakes coastline south of the Canadian Shield.**

- **The proportion of original coastal or near-coastal wetlands on the north shore of Lake Ontario was probably slightly less than 15%, in the range of 10-12%, since Lake Ontario lacks the kinds of large marshes found on Lakes Erie and St. Clair.**

- **There are approximately 4200 hectares of existing wetland now within the Greenway, of which approximately 1200 hectares are publicly owned and 3000 hectares are private.**

- **Proposals or projects are underway for the restoration of approximately 1000 hectares of wetland within the Greenway, with approximately 250 hectares anticipated in the next five years.**

- **Taking these factors into account, a target of 850 hectares is suggested, which is 14% of the COA five-year target. If 250 hectares are restored on existing public lands, the remaining 600 hectares to be protected represent one-fifth of the current privately-owned wetland area.**

Ric Symmes, Sternsman International

Planting trees at the McLaughlin Bay Wildlife Reserve, Oshawa

Steps to come:

- To sustain ecological functions in the landscape, minimum amounts of forest and other natural habitats are necessary. While specific targets for forest cover should be refined through Integrated Shoreline Management Plans and subwatershed plans, in general terms landscape targets to maintain at least the more common, edge-tolerant wildlife species should be in the range of:

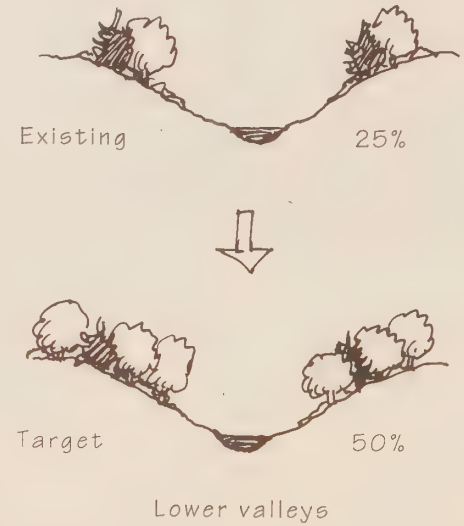
  - 50% natural vegetation within the lower sections of major valleys, including both floodplain and valley slopes (roughly double the current average);

  - 10% forest and natural vegetation in urban municipalities (roughly double the current average); and

  - no net loss of forest cover in rural landscapes, as well as substantial gains in those which provide regional linkage functions or forest interior habitat, or those with under 5% existing natural habitat.

Jack Imhoff, Ontario Ministry of Natural Resources

Stream rehabilitation

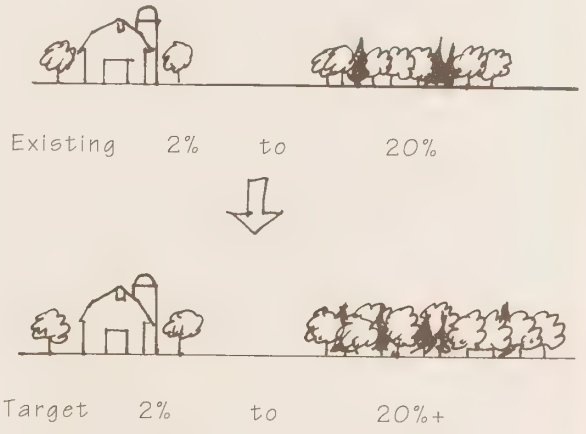


- Some targets have been established at a broad level. Under the Canada-Ontario Agreement (COA) respecting the Great Lakes Basin Ecosystem, targets established for the year 2000 include the securement or restoration of 6000 hectares of wetland and 600 kilometres of stream habitat. The Great Lakes Wetlands Conservation Action Plan (part of COA) identifies a list of priority coastal and near coastal wetlands to meet this target. As part of this effort, agencies involved with wetland conservation and restoration should strive to meet a target of 850 hectares of additional wetland habitats protected or restored within the Lake Ontario Greenway over the next five years.

- The Metro Toronto RAP has proposed targets of re-establishing 10-20 hectares of waterfront marsh by the year 2000, and 65-75 hectares by the year 2010. As well, the construction of 2 kilometres of open coast reef habitat by the year 2020 is proposed.

- Within the context of emerging fish community objectives for Lake Ontario, fish habitat targets can be developed for the north shore of Lake Ontario, particularly in relation to the role of the open coast in restoring pelagic (wide-roaming) coldwater species.

Related implementation mechanisms in Chapter 4: A.1, A.4, A.5, B.1, B.2, C.3



ACTION 2.1

SOURCES OF ADDITIONAL INFORMATION:

Canada. Environment Canada. 1995.
Cleanup Fund Resource Manual for Rehabilitating Great Lakes Habitat

Waterfront Regeneration Trust. 1995.
A Natural Heritage Strategy for the Lake Ontario Greenway

Hough Stansbury Woodland Naylor Dance Limited. 1995.
Restoring Natural Habitats

Hough Stansbury Woodland Naylor Dance Limited. 1994.
Ecological Restoration Opportunities for the Lake Ontario Greenway

Suzanne Barrett, Waterfront Regeneration Trust

Habitat creation at the Clarkson Refinery site

Action 2.2:

Target restoration programs to priority habitat types

In addition to generally increasing natural habitats within the Greenway, restoration programs should focus on some habitat types with particularly urgent needs. Grouping many restoration projects to reinforce key habitat nodes or corridors has the greatest potential to bring positive results.

Examples of progress to date:

- A number of wetland restoration projects are underway or planned at Coote's Paradise, Lakefront Promenade Park, Mimico Creek, Colonel Sam Smith Park, Chester Springs Marsh in the lower Don valley, Oshawa Second Marsh, and Nauwatin Shores, among others.
- Restoration of beach and backshore/onshore dune communities is underway in Presqu'ile Provincial Park, and is a significant aspect of plans for Burlington Beach.
- The Canadian Wildlife Service and Ministry of Natural Resources are leading a partnership to provide artificial nesting structures to help restore peregrine falcons and osprey to historic or potential breeding areas along the Greenway.
- Restoration of upland habitats has occurred or is planned at the Clarkson refinery site, Toronto Islands, Humber Bay Park East, High Park, the Ajax waterfront, and the Rouge Park.

Steps to come:

- Five habitat types are in special need of restoration programs:

❶ Large blocks of forest and marsh habitat that provide interior habitat, especially along the Greenway from Cobourg west to Burlington.

Jim Robb

Purple loosestrife, Little Rouge River

Project Loosestrife: Reclaiming a Marsh

On the lakeshore south of Grafton, Bob and Marg Marshall can watch with pride as wildlife returns to a small wetland near their home. Several years ago, as part of an agreement for a small rural subdivision, they deeded 14 acres of wetland and stream corridor to Haldimand Township. But the wetland was choked with a solid mat of purple loosestrife, an invasive plant that is rapidly becoming the bane of shallow marshes.

Bob's initial inquiries to the Ministry of Natural Resources produced background materials on loosestrife control, but no easy answers. He kept digging for information, and talking to experts and non-experts alike, and gradually developed an experimental approach he thought might work. The Ministry agreed to provide the necessary permits, the Township agreed to allow work on its land, and work began. While much of the necessary funds and support came from the Marshalls, jobsOntario*Capital* later provided some financing as well.

The restoration project involved dredging the main wetland basin to a depth below the rooting zone for loosestrife, and developed a sharp edge to drier land. Nesting islands were created within the open water area, and native shrubs were moved into disturbed areas to hasten their recovery. Ducks Unlimited Canada has become involved, providing a small water control structure to manage water levels. The project has also created public walking paths around the wetland, which forms a side loop off the Waterfront Trail.

Will the experiment work to control purple loosestrife? It is too soon to know, but the Marshall's reclamation project may yield valuable field experience that can be applied elsewhere along the Greenway.

❷ Shoreline and estuarine wetland habitats, especially those located near river mouths or existing wetlands, which could provide habitat connections for fish as well as wildlife staging benefits.

❸ Habitat linkages within bioregional corridors, especially river valley corridors near their mouths, where the continuity of natural habitats (both aquatic and terrestrial) has often been severed.

❹ Specialized Great Lakes shoreline habitats (dynamic beaches and dunes, bluffs) which exist in limited supply.

❺ Other specialized habitats that enhance overall biodiversity, such as habitats for threatened species, or small ponds sheltered from fish predation for amphibian breeding.

- Aside from the Hamilton Harbour RAP projects already underway, most warmwater fish rehabilitation projects should be directed to the central waterfront between Rattray Marsh and Tommy Thompson Park, since this area provides the greatest potential for benefit from increased habitat size and linkage.

- An assessment should be carried out of the potential improved benefits that could result from grouping mitigation measures required under the Fisheries Act into larger, strategically placed habitat restoration areas rather than being scattered in the vicinity of small individual projects.

- There are opportunities to incorporate habitat restoration measures with trail or urban development projects near valley mouths or in other waterfront settings, such as in the Bronte Creek, Credit River, Humber River, Duffins Creek, Carruthers Creek and Cobourg Creek areas.

- In some areas, it is possible to develop relatively large restoration nodes with the potential to develop interior habitat in association with river valleys, such as around the mouths of Lynde Creek, Farewell and Tooley Creeks, Wilmot Creek, and Shelter Valley Creek.

- Especially in urban parts of the Greenway, valley corridor restoration plans could be developed to identify the best opportunities for ecological restoration, to re-connect both aquatic and terrestrial habitats and to develop recreational trail connections to adjacent communities. Valley corridor restoration plans could form one part of a watershed strategy, or could be approached as part of a greenway strategy for the valley. Restoration plans should determine site-specific opportunities to enhance or restore habitat, and involve both public and private lands in restoration activities.

Related implementation mechanisms in Chapter 4: A.1, A.2, A.4, A.5, A.6, B.1, C.1

Landplan Collaborative

Duffins Creek

ACTION 2.2 SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust:
A Natural Heritage Strategy for the Lake Ontario Greenway
Shoreline Management Workgroup Report

Hough Stansbury Woodland Naylor Dance Limited. 1995.
Restoring Natural Habitats

Hough Stansbury Woodland Naylor Dance Limited. 1994.
Ecological Restoration Opportunities for the Lake Ontario Greenway

Re-Discovering Old Pleasures:

A Walk On The Shingle

When the Town of Oakville decided to enhance the shoreline treatment for Lakeside Park in the mid-1980s, it looked back in time for the solution. By re-creating a shingle beach, the Town partially restored a natural and historic feature and improved accessibility to the water's edge.

The large, flat stones that formed the high-banked shingle beaches once found everywhere on this stretch of Lake Ontario's shoreline were used as construction aggregate early in the 20th century. The proposed site of a parking garage in downtown Oakville provided suitable beach material. Grey shale of the Georgian Bay formation – similar to the material that originally existed along the shore – was excavated from the site and trucked to the park.

As a form of shoreline protection, the restored, semi-natural shingle beach is performing well. The cost of the work was comparable to the option of traditional armour stone revetment. By regenerating the shingle beach at Lakeshore Park, people of all ages can now enjoy a walk at the waters-edge and a chance to watch shore birds. Whether park visitors are there for a concert or a leisurely stroll, the shingle beach provides an enjoyable waterfront experience.

Gary Fields, Waterfront Regeneration Trust

Shingle beach, Oakville

Action 2.3:
Restore natural shoreline structure and processes

Along the western half of the Greenway, much of the shoreline has been hardened to protect against erosion and flooding, and to increase the land base through lakefilling. The most common shoreline types now within the urbanized sections of the Greenway are revetments, groynes, armour stone seawalls and sheet piling. Replacing these treatments as they reach the end of their life expectancy offers opportunities to restore natural structure and processes to the shoreline.

Examples of progress to date:

- Several projects are underway that demonstrate the feasibility and value of environmentally-friendly shore treatment, including re-creation of shingle beaches in Oakville, and replacement of dock wall at Harbour Square Park in the Toronto Inner Harbour with a naturalized edge and aquatic habitat features.

- A checklist of criteria for determining appropriate shoreline treatment and retrofitting has been developed (included in toolkit).

- The Ecosystem Approach to Shoreline Treatment workshop in the fall of 1993 provided a forum for discussion of new approaches to shoreline treatment incorporating elements that restore natural processes.

- The Hamilton Harbour Remedial Action Plan's Fish and Wildlife Habitat Restoration Project has produced a bulletin on shoreline protection and habitat enhancement, for use by shoreline landowners in Hamilton Harbour.

Steps to come:

- The preparation of Integrated Shoreline Management Plans can target priority areas and encourage groups of landowners to naturalize significant stretches of shoreline in a cost-effective manner.

- Shoreline management approval agencies should be encouraged to experiment with innovative treatments to naturalize shorelines at a reasonable cost, and to avoid costly delays in approval of methods that result in naturalized conditions.

Related implementation mechanisms in Chapter 4: A.2, A.5, A.6, B.1, C.1

ACTION 2.3

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust:
Shoreline Management Workgroup Report
Checklist for Shoreline Treatment
Ecosystem Approach to Shoreline Treatment (EAST) Workshop Proceedings, 1994

Hamilton Remedial Action Plan. Fish & Wildlife Habitat Restoration Project Steering Committee. N.d.
Protecting Your Shoreline Naturally!

ACTION 2.4

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust. 1998. *The Daily Honker*.

Action 2.4:
Restore balance to Canada goose populations

The race of Giant Canada geese re-introduced to the waterfront area in the 1960s has responded so well to the close proximity of mowed grass, water, and human handouts that its populations have become a serious nuisance in many waterfront parks. In particular, the abundance of goose feces impairs the recreational uses of lawns and paths, and contributes to water quality problems in some enclosed areas.

Other waterfowl species contribute to this problem in some locations, particularly mallard ducks. As well, mute swans (an introduced species) are undesirable in natural settings, since they are very territorial and prevent most other waterfowl from nesting.

Examples of progress to date:

- *The Daily Honker* information brochure has been developed by waterfront municipalities and resource management agencies for distribution to the public in waterfront parks to discourage feeding of waterfowl.
- An overview of methods for dealing with nuisance waterfowl has been compiled for waterfront managers, and is available in the toolkit.

Steps to come:

- Wildlife agencies, park managers, waterfront landowners, interested community groups, and municipalities should continue to meet periodically to share information.
- Federal and provincial wildlife agencies should take the lead in research on Canada goose control methods to assist communities in finding workable solutions.
- Agencies, municipalities, and landowners should continue to work together to develop a coordinated strategy to control geese numbers along the waterfront through habitat management practices or population control.

Related implementation mechanisms in Chapter 4: B.1

Action 2.5:
Restore degraded waters and sediments

As outlined in Chapter Two, considerable progress has been made in improving lakewide water quality in Lake Ontario, but resolution of nearshore water and sediment quality concerns has been slower than originally anticipated. For many of the people of the Bioregion, progress on restoring the lake to a healthy state is the most visible and meaningful measure of its regeneration.

Examples of progress to date:

- A Lake Ontario Toxics Management Plan (LOTMP) was developed in 1989 with updates in 1991 and 1993. Its goal is a lake that provides safe drinking water and fish that are safe for unlimited consumption, and that allows natural reproduction within the ecosystem of the most sensitive native species, such as bald eagle, osprey, mink and river otter. A number of priority persistent toxic substances have been identified to date by the LOTMP, which will now form the basis for a broader ecosystem-based Lakewide Management Plan for Lake Ontario.

- In 1994, both Canada (under its Federal Great Lakes 2000 Program) and Ontario re-affirmed their commitment to achieve virtual elimination of persistent, bioaccumulative and toxic substances by signing the Canada-Ontario Agreement (COA) Respecting the Great Lakes Basin Ecosystem. For the first time, COA identifies specific targets along with specific dates.

- MOEE's CURB (Clean Up Rural Beaches) program has been of assistance in addressing restoration of degraded waters in tributaries, and in reducing pollution loads to the lake.

- Both the federal and provincial governments operate a range of monitoring programs within Lake Ontario, and have a variety of regulatory and voluntary programs (such as the Municipal-Industrial Strategy for Abatement, the Great Lakes Pollution Prevention Centre, etc.) which have a continuing positive influence on water quality in this lake basin and elsewhere.

- The Hamilton Harbour RAP (Remedial Action Plan) is being implemented through the coordinated efforts of the Bay Area Implementation Team (BAIT) and the Bay Area Restoration Council (BARC), together with many partners in the community. Over the past two years, progress has included:

Suzanne Barrett, Waterfront Regeneration Trust

Degraded waters, Black Creek Valley

City of Etobicoke

Proposal for managing stormwater runoff: balancing system for Etobicoke's Motel Strip

- Remediation of combined sewer overflows (CSOs) at a faster rate than initially anticipated, partly as a result of federal matching funds for infrastructure renewal.

- Expansion of the primary treatment facility at Woodward Avenue STP (Sewage Treatment Plant) is in the environmental assessment stage, and sewer use bylaws are in place; public concerns about high bacterial counts in creeks may necessitate consideration of the feasibility of accelerating CSO and STP improvements.

- Promotion of a project to remove and treat highly contaminated sediments in a few small areas of the harbour is being undertaken through the Great Lakes Cleanup Fund; some federal funding is available, and it is critical that matching funding be provided as soon as possible by the Province and other partners.

- Several offshore islands are being constructed to provide fish and bird habitat.

- Related land use issues are being addressed through such initiatives as an erosion control manual workshop, a shoreline property owners pamphlet and workshop, distribution of harbour maps, and cleanup activities and development of trail systems and an interpretive centre in Red Hill Creek.

- Progress on the Metro Toronto RAP has been significantly slower; accomplishments to date include:

  - The Don Watershed Task Force, working with MTRCA, developed and has begun implementation of a watershed ecosystem-based strategy called *Forty Steps to a New Don.*

  - In the Emery Creek watershed, citizens developed a strategy for the management of stormwater, and the industrial and business sector formed an association to control pollution at its source.

  - A design by the City of Etobicoke to incorporate a wetland to treat stormwater runoff in the Motel Strip area has been prepared.

  - A Stage 2 RAP report with recommended remedial measures was provided to the federal and provincial governments almost a year ago, but there has been no response yet.

  - RAP implementation has been moving slowly to a watershed ecosystem-based approach with remedial options directed to each of the six major watersheds.

  - Some implementation activities are underway as part of normal municipal infrastructure maintenance.

The Metro Toronto RAP process has had difficulty in bringing the watershed municipalities on board as true partners, and in effectively garnering public support for cleaning up the watersheds and the waterfront. Major problems not being aggressively pursued include combined sewer overflows, stormwater discharges, contaminated sediments, and source control of pollutants. In some cases, the complex approval processes for remedial projects has hampered their timely implementation.

- Progress on the Port Hope Harbour RAP is predicated on finding an appropriate site to safely store the low-level radioactive contaminated sediments in the harbour. A Siting Task Force has been searching for a willing "host community" to accept these sediments; public consultation within potential host communities is proceeding.

- The Bay of Quinte RAP has adopted a dual approach:

  - Cleanup of historic and existing problems with capital works and abatement actions, such as sewage treatment plant upgrades, industrial abatement, and agricultural improvements.

  - Prevention of new problems through education, planning and proactive prevention techniques such as subwatershed planning, land stewardship and natural habitat protection.

  - A Stage 2 report (recommended actions) has been submitted to governments; no response has yet been received but some implementation actions are underway.

Steps to come:

- Canada and Ontario, together with their U.S. counterparts, are developing Lakewide Management Plans (LaMPs) to provide coordination of planning and restoration activities for each of the Great Lakes. Progress has been very slow in the development of binational LaMPs, which was to begin in 1987. In addition, there has been little progress in the development of a binational strategy for the management of toxic substances in the Great Lakes basin, something the International Joint Commission called for over 13 years ago. For Lake Ontario, the existing Toxics Management Plan (LOTMP) will serve as a foundation for the LaMP, which is to be ecosystem-based. The signing of the Canada-Ontario Agreement provides an opportunity for renewed action to realize the agreed-upon goals.

ACTION 2.5

SOURCES OF ADDITIONAL INFORMATION:

Canada. Environment Canada. 1993.
Lake Ontario Toxics Management Plan

Hartig, J. H., and N. L. Law, 1994.
Progress in Great Lakes Remedial Action Plans: Implementing the Ecosystem Approach in Great Lakes Areas of Concern

Metropolitan Toronto and Region Conservation Authority. 1994.
Forty Steps to a New Don

Hamilton Remedial Action Plan. Fish & Wildlife Habitat Restoration Project Steering Committee. N.d.
Protecting Your Shoreline Naturally!

- Although a number of remedial actions are being implemented as described above, the Remedial Action Plan process in most cases still needs to achieve several levels of approval, and requires the political will and financial support of the federal, provincial and municipal governments to achieve its goals. A re-invigoration of the RAP process as the primary vehicle to restore the health of nearshore waters and sediments offers the best near-term opportunities to achieve progress in a very complex area.

- Continued monitoring to evaluate the extent of nutrient, toxics, and sediment pollution elsewhere along the shore should be encouraged, particularly in sheltered waters adjacent to industrial areas, such as Oshawa Harbour. Information sharing on specific control and management options for such issues as bacterial pollution and nuisance algae on beaches should also take place.

- Watershed restoration strategies and subwatershed plans should be strongly encouraged for north shore tributaries on a priority basis, similar to the Forty Steps to a New Don program already underway for the Don River. In areas of major new development, subwatershed plans should be regarded as a prerequisite to land use approvals, so that future pollution problems can be prevented, and existing problems remediated where necessary. In existing urban areas undergoing re-development, comprehensive water quality improvement studies may be a more appropriate approach.

Related implementation mechanisms in Chapter 4: A.2, A.4, A.5, C.1

Suzanne Barrett, Waterfront Regeneration Trust

Mouth of Duffins Creek

Action 2.6:
Restore sites with contaminated soils or groundwater

There are many sites where past industrial uses have affected soil, surface water and groundwater along the waterfront, with a heavier concentration in the Toronto central waterfront and the Port Industrial District. The nature and extent of these impacts is often poorly understood until sites are investigated as part of a development proposal or land transaction. Remediation efforts have been hampered by regulatory uncertainty, high costs, and uncertain assignment of liability. Some of the most challenging issues focus on financing and legal concerns.

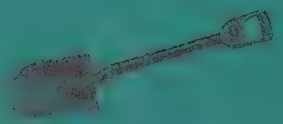
Examples of progress to date:

- The MOEE has revised its policies regarding contaminated sites. Public consultation was completed in November 1994, and the proposed *Guideline for Clean-up of Contaminated Sites in Ontario* is expected to be available in spring 1995.

The proposed guideline provides information to assist property owners and their consultants in making site restoration decisions and to ensure that the site is suitable for its intended use. Key features of the proposed approach include:

Imperial Oil

Bioremediation is being used by Imperial Oil to restore contaminated soils at their waterfront lands in Cobourg. The natural bacterial process that degrades hydrocarbons in the soil is enhanced by creating piles of soil and adding nutrients and oxygen.



The Lower Don Lands:

Cleaning Up For Economic Renewal

In December 1992, Shell Canada shut down its distribution and lubricants blending and packaging centre after 60 years of operation on a 7.3 hectare site in Toronto's Port Industrial Area.

In planning and implementing the restoration program for the site, consultations with neighbours and regulatory agencies assisted Shell in developing an approach that was both cost effective and responsive to community concerns, which included noise, air quality, truck traffic, site security, and information sharing.

The next stage, the dismantling program, included removal of hazardous substances from the site and recycling of over 90% of the building materials, including scrap metal, bricks and concrete. Two newsletters were produced during the demolition program to share information with industrial and other neighbours.

Following a site investigation, information about the nature and extent of contamination was used by Shell to conduct a site specific risk assessment. This helps determine the areas of the site that need to be remediated in order to protect the next site users and the surrounding environment.

Most of the soils that were contaminated with hydrocarbons were cleaned and recycled using low temperature thermal desorption technology, and returned to the site after it was confirmed that cleanup criteria had been met. Soils contaminated with arsenic and pesticides were disposed off-site.

Permanent barrier walls were put into place below the ground surface at parts of the site to prevent the possibility of offsite hydrocarbon materials migrating back onto the site. Regular monitoring will be carried out to ensure that the mildly contaminated material left on site will not pose any concerns for human health and safety.

Technical and administrative requirements, ensuring responsibilities for long term monitoring and a process for changes in land use and design, were formalized in agreements between the responsible parties.

Toronto Hydro, the next tenant, has begun construction of their 43,000 m² service centre facility, which will employ over 1,000 people.

- more guidance on methods for site investigation and site assessment;
- guidance on public consultation;
- choice of background, generic and site specific cleanup approaches;
- the generic approach includes both full depth or stratified depth cleanup and provides potable and non-potable groundwater criteria;
- provision of 117 generic criteria for soil and groundwater;
- municipal concurrence with the use of non-potable groundwater criteria and with the use of a site-specific risk assessment;
- registration of site information on property title where a stratified or site specific approach is used; registration is not required for full depth cleanup.

Responsibility for the site cleanup resides with the property owner and its consultant. MOEE will continue to be directly involved when the contamination is causing, or could cause, an adverse effect to the environment and when a stratified depth generic cleanup approach or a site specific risk assessment approach is used. MOEE involvement would not be needed in cases where cleanup to background levels is undertaken unless approval is needed for a particular remediation method.

- Under the coordination of the Canadian Council of Ministers of the Environment (CCME), draft protocols for ecological and human health risk assessment are under development and are expected to be available in 1995. When finalized, these guidance documents are expected to be adopted in the MOEE's proposed *Guideline for Clean-up of Contaminated Sites in Ontario.*

- In March 1993 the CCME approved 13 principles to guide development of environmental liability policy and legislation across Canada. In addition, MOEE has initiated actions to provide more certainty for secured creditors in situations where contaminated property is involved. Further consultation is expected to examine practical ways to achieve more certainty for all stakeholders.

- *A Guide to Creating a Historical Land Use Inventory of Potentially Contaminated Sites for Municipalities in Ontario* (included in toolkit) has been developed by the Canadian Urban Institute in partnership with the Ministry of Housing and the City of Toronto. The Trust has used this methodology to develop a preliminary mapping of land uses along the waterfront where site investigations may be needed as part of restoration and redevelopment initiatives. The cities of Toronto and Etobicoke are in the process of preparing detailed historical land use inventories.

- A *Remedial Methods Handbook* is also included in the toolkit, as a result of a partnership between the Trust, MOEE, and Ontario Hydro. The Handbook provides information on the evaluation and application of a range of site restoration techniques.

- Remediation projects are underway in several locations along the waterfront, including sites in Oakville, Mississauga, the Lower Don Lands, Cobourg, and Trenton. Projects are at various stages of development, and restoration methods include bioremediation, low temperature, and thermal desorption technology.

Steps to come:

- Continued efforts are needed to foster renewal by:

  - monitoring the implementation of the proposed *Guideline;*

  - streamlining the regulatory approval process and requirements;

  - clarifying liability for historic contamination;

  - clarifying the role of governments, landowners, investors and the public;

  - demonstrating the technical and economic viability of restoration methods.

ACTION 2.6

SOURCES OF ADDITIONAL INFORMATION

Waterfront Regeneration Trust:
Remedial Methods Handbook
Toward an Historical Land Use Inventory for the Lake Ontario Greenway

Advisory Committee on Environmental Standards, 1994
Proposed Guideline for the Clean-Up of Contaminated Sites in Ontario: Recommendations to the Minister of the Environment and Energy

Canadian Urban Institute and City of Toronto Environmental Protection Office, 1994
A Guide to Creating a Historical Land Use Inventory of Potentially Contaminated Sites for Municipalities in Ontario

- Municipalities along the Greenway should be encouraged to develop an historical land use inventory to assist in land use decision making where there has been a history of industrial use or other activities that may have impacted environmental conditions. Within these areas, proposals for new development or land use change should trigger proponents to carry out Phase 1 environmental site assessments. As outlined in the proposed *Guideline for Clean-up of Contaminated Sites in Ontario*, this initial assessment will determine if it is necessary to undertake more detailed site investigations and preparation of a soil and groundwater management plan.

- The continued involvement of lending institutions, legal professionals, and land developers should be encouraged in further dialogue on how to restore lands in an economically feasible and environmentally safe way, in the context of solutions that are acceptable to these institutions and to the public.

Related implementation mechanisms in Chapter 4: A.1, A.2, C.2, C.3

Action 2.7:
Strengthen community identity and landscape character

The rapid urbanization of much of the Greenway has led to a blandness in many communities – their distinctiveness masked by malls and strip development, cookie-cutter subdivisions and replicated chain stores. Yet some sections retain much of their unique character – the historic cores of Oakville, Port Hope and Cobourg, the special feel of residential neighbourhoods in Toronto's Eastern Beaches or along the Scarborough Bluffs, the small town character of Bowmanville and Colborne; the farmlands and orchards of Clarington and Northumberland. Restoring and strengthening the "sense of place" of all waterfront communities will not only encourage more pride and involvement by those who live there, but also make them more attractive places to visit.

Examples of progress to date:

- The background report, *Waterfront Experiences*, divides the Greenway and adjacent area into 52 visual units and describes their visual character, including major views and landmarks, associations and meanings, interpretive potential, and implications of change. A range of strategies to protect and enhance the visual quality of waterfront landscapes is also provided. (Map 11 includes the significant views along the Greenway)

Garrison Creek: In Search of Buried Treasure

Garrison Creek, once the eastern boundary of Fort York and a distinctive natural feature of Victorian West Toronto, was buried in a brick sewer in the 1880s. Rather than remain a forgotten environmental casualty of urbanization, the creek is slowly becoming part of the landscape again, thanks to the efforts of an innovative, watershed-based community group.

The Garrison Creek Community Project was initiated in 1993 to promote public awareness of the Garrison Creek ravine system as it once existed and as it appears today. Community walks were organized to explore the creek's natural and cultural heritage features. These included Gore Vale, the remains of a 1818 brick building excavated in Trinity-Bellwoods Park, and the Farr House, once part of a 19th century brewery powered by Garrison Creek. The fascinating stories connected with the creek attracted 250 participants to one walking tour.

A one-day "Exploring the Possibilities" conference was held in February 1994. It brought together residents from all walks of life – historians, naturalists, architects, engineers, politicians, planners, professors, and gardeners – all with an interest in reclaiming the creek.

Several projects have been proposed by the Garrison Creek Community Group, including creation of storm water management ponds, digging out buried bridges, and design of a pedestrian link between the foot of Niagara Street and Fort York. Other ideas under consideration are interpretive displays, public art, and a tree-planting program to provide a green canopy along the edges of the original creek. An environmental stewardship program will help to keep the project on course. The group hopes to revitalize local economies, expand public use of park lands, and enhance the quality of life and health of those who live and play in the Garrison Creek watershed.

As Toronto grew in the late 19th century, Garrison Creek posed a health risk. The solution was to bury it. But today waterways are recognized as essential elements of a city's ecosystem. They can be used to filter storm water and enhance park land, thereby improving the health of communities. The regeneration of Garrison Creek, the largest of several buried streams in the city, is an opportunity to reconnect Toronto to its past and its ecology. The Garrison Creek Community Group has become an excellent prototype for other North Shore communities wanting to restore lost or damaged natural systems.

ACTION 2.7

SOURCES OF ADDITIONAL INFORMATION:

Landplan Collaborative Ltd. 1995.
Waterfront Experiences: An Analysis of Waterfront Experiences for the Lake Ontario Greenway Strategy

Brook McIlroy Greenberg Ltd., Marshall Macklin Monaghan Limited, and REIC Ltd. 1994.
Making Choices: Alternative Development Standards Guideline (draft).

- Many waterfront communities have been active in downtown revitalization, often building on the strengths of local architecture and historic themes to reinforce distinctiveness.

- Communities that have recently produced updated Official Plans or waterfront plans have usually included policies relating to community heritage, waterfront development, and urban design.

- The Ministries of Housing and Municipal Affairs have released a draft guideline on alternative development standards, *Making Choices*, which would allow more flexibility in design and help retain more distinctiveness in a community's physical character.

Steps to come:

- Views of landmarks and panoramic or distant vistas along the waterfront can be recognized in planning documents and protected during development activities, both as seen from streetscapes or other vantage points, and as seen from offshore in the vicinity of recreational harbours.

- Municipalities along the Greenway should be encouraged to identify landscape character and elements particularly valued by local residents and visitors, to assist in strengthening recognition of the character and identity of individual communities. Design guidelines based on the information provided in the *Waterfront Experiences* report can be implemented to fit local circumstances, with special attention paid to the qualities of landscape distinctiveness, harmony, integrity, and openness.

- Communities along the Greenway should consider developing public parks that strengthen community identity and pride through the inclusion of features such as boardwalks, beaches, statues and other art, fountains, memorials, gazeboes, amphitheatres, and gardens. The location of these parks and the choice of features should be carefully considered so that they protect, reinforce and celebrate community character.

- A coordinated program of tree-planting would be helpful in strengthening rural landscape character, particularly planting to hasten the regeneration of abandoned farmland, the replacement of traditional rows of roadside trees in many agricultural areas, and the replacement of windbreak trees around many farmsteads.

- Programs should be initiated to relocate local utility lines underground or offset from the street where they conflict with the protection of roadside trees or where they are visually intrusive. Potential conflicts with other utilities and the degree of additional cost will have to be considered on a site-specific basis.

Related implementation mechanisms in Chapter 4: A.1, B.1, B.3, C.1

OBJECTIVE 3

Promote greater awareness, understanding, access and recreational use of the waterfront and encourage community pride and participation in its regeneration.

Many communities have re-discovered their waterfronts in recent years. By providing access to the water's edge, they have made a more attractive place to live, and provided opportunities for healthful recreation. At the same time, the people visiting the waterfront have become more aware of the environmental challenges in many places along the shore, and have become committed partners in its regeneration.

This objective is intended to encourage and strengthen this process, which begins with community recognition of the value and potential of the waterfront.

Action 3.1:

Encourage appropriate access to and use of the waterfront

While increased public access to the waterfront is a major theme of the Greenway Strategy, it is not appropriate everywhere. Decisions on access must be related to the ability of each area to sustain various levels and types of use. Protection of environmentally sensitive areas must be given priority; the rights of private landowners to control trespass and of neighbourhoods to protect a reasonable degree of privacy have to be respected. Where it is appropriate, the kinds of access provided should bring a range of opportunities, from quiet, passive contemplation to active, exuberant play. In all cases, priority should be given to water-enhanced recreation in the immediate shoreline zone rather than sports fields or other activities that do not benefit to the same extent from waterfront locations.

Examples of progress to date:

- The waterfront from Burlington to Trenton currently has 126 parks and promenades, and 69 marinas and yacht clubs, all providing access to the water's edge for recreational activities.

- Most municipalities along the Greenway have been active in improving waterfront access through Official Plan policies requiring dedication of waterfront lands during development, management of parks and street ends to enhance waterfront access, development of comprehensive waterfront plans with access as a major component, and purchase of waterfront lands for parkland or other access projects.

Promote understanding and recreational use

To achieve this objective, a number of actions are planned and underway:

3.1 Encourage appropriate access to and use of the waterfront.

3.2 Complete and upgrade the Waterfront Trail.

3.3 Develop public understanding of waterfront processes and values.

3.4 Develop community participation in waterfront projects.

3.5 Strengthen traditional waterfront festivals and celebrations.

3.6 Recognize changing populations in planning waterfront recreation.

3.7 Link recreation resources with health promotion.

3.8 Increase accessibility to all members of the community.

Encourage appropriate access

- Recent upgrading of GO Transit service along the lakeshore corridor, and the provisions to allow bicycles to be carried on GO trains in off-peak periods, are helpful in providing access to various parts of the Greenway.

- Provincial capital funding allocations have been matched by local contributions to improve public access, including the Waterfront Trail and other projects such as a new boat launch facility in Haldimand Township, a waterfront promenade in Burlington, and Halton Region's development of parkland at Bronte Harbour.

- Thematic guides to the waterfront are being produced by the Trust, including a *Guidebook to the Waterfront Trail* with information about local attractions and services, a guide to birdwatching, and a naturalist/artist's journal. Local guides to various aspects of waterfront history or activities have also been produced in such communities as Etobicoke and Port Hope.

Steps to come:

- From Clarington east, public lands along the waterfront are extremely limited, with the notable exception of Presqu'ile Provincial Park. If opportunities arise to bring significant blocks of waterfront into public ownership, especially areas providing multiple benefits (suitable for public access, protecting shoreline features or habitats, incorporating cultural heritage, etc.), they should be pursued.

- In evaluating and designing new waterfront facilities, the role of the waterfront as a regional recreational resource should be given priority (as opposed to serving solely local needs). The trends towards increasing demand for linear access to the waterfront landscape (for walking, cycling, or boating), and the limits to the environment's capacity to support these activities, will need to be considered in future waterfront projects. Other regional recreation roles could include boat launch and marina facilities, significant bird-watching or natural areas, campsites, and major beaches, among others.

- All recreation facilities, including trails, should be located and designed to avoid negative impacts on significant habitats and established neighbourhoods, and should emphasize environmentally-friendly design, materials, and construction methods.

- Additional or improved boat launch facilities and associated parking for day use boaters, together with harbours of refuge along the open coast, should be developed along the Greenway where warranted by boater demand.

- Financial and other incentives should be developed to encourage private owners of large blocks of land along the waterfront to allow appropriate public access.

- Waterfront recreation facilities should be actively programmed where possible, to encourage use and to keep public support for their maintenance and improvement. The Ajax Rotary Club's 10 km "Run the Waterfront" event to raise funds for a local hospital is a good example.

- To meet the needs and expectations of the increasing number of people with diverse interests, waterfront open spaces should be managed to enhance the quality and diversity of potential experiences (e.g. urban and wilderness areas, landscaped parks and natural habitats), and to extend seasonal use through plantings for shade and wind shelter, sculptures, fountains, seating, storm-watch shelters, etc.

Related implementation mechanisms in Chapter 4: A1, A6, B.1, B.2, B.3, C.1

ACTION 3.1

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust. 1995.
A Guide to the Waterfront Trail: Explore Yesterday, Today and Tomorrow along the Shores of Lake Ontario

Action 3.2:
Complete and upgrade the Waterfront Trail

A waterfront trail linking existing attractions was originally suggested by the Royal Commission as a way to increase waterfront access, encourage public understanding of the inter-connected nature of the waterfront, and promote support for its regeneration. After considerable public discussion and agency negotiations, a trail route for cyclists and walkers is now substantially in place from Burlington to Trenton.

Complete the Trail

Examples of progress to date:

- Guidelines for trail design, signage, and maintenance, including background on liability and risk management, have been produced as part of the toolkit.

- Agreements on the initial route for the Waterfront Trail and on roles and responsibilities for its management have been achieved in 20 of the 22 municipalities along the Greenway, including the involvement of six conservation authorities, several provincial ministries and agencies including Ontario Hydro, Parks Canada, and eleven private industrial landowners.

- Provincial, municipal, and federal funding has been provided for 54 trail implementation projects through jobsOntario*Capital*, jobsOntario*Community Action*, Canada-Ontario Infrastructure Works Program, and the Ministry of Transportation to establish 239 kilometres of the initial route, of which 43 kilometres is off-road in parks and other open spaces, and 196 kilometres is within road rights-of-way.

- A *Waterfront Trail Demand Analysis* report and a user survey program, including a pilot user survey in four locations, have been developed to assist in trail management by providing information on trail user types, expectations, and numbers.

- Provincial funding has been announced to develop regional trail connections in the Hamilton-Wentworth and Niagara regions, which will extend the range of opportunities for Waterfront Trail users.

Steps to come:

- Resolution of an acceptable trail alignment across Scarborough is still required, which depends in part on an evaluation of the feasibility and costs of a below-the-bluffs alternative through the Integrated Shoreline Management Plan.

- Resolution of locally acceptable trail alignments past Wilmot Creek retirement community in Clarington and across Hope Township are also required.

- Additional capital funding will be needed to support completion of the critical missing links to a continuous trail, most notably:

  - trail links past Wilmot Creek retirement community,

  - trail links across Scarborough and Hope Township, and

  - Lakeshore Boulevard and the Motel Strip area in Etobicoke.

The Whitby Trail: Fostering Partnerships

Industrial areas along the Greenway offer exciting opportunities for the formation of partnerships to achieve mutual objectives and enjoyment of the waterfront. In 1994, two industrial employers on Whitby's waterfront – LASCO, a manufacturer of steel products such as concrete reinforcing bars, and Dupont, a manufacturer of plastic products such as milk bags and snow fences – joined the Town of Whitby and the Province in a partnership dedicated to the principles of regeneration. This partnership resulted in the construction of a two-kilometre link in the Waterfront Trail when, in August that year, LASCO and Dupont agreed to lease a total of 65 acres of waterfront open space to the Town for a nominal fee.

The open space is located between the Lake and the proposed Water Street extension between Thickson Road and South Blair Street. The planned extension is still several years down the road, but a 3-metre wide asphalt path for pedestrians and cyclists already crosses the leased property. Other passive and recreational uses might be included in future plans for the open space.

Built a safe distance from the high cliffs that distinguish this section of the waterfront, the trail meanders through former corn fields that are being regenerated though natural processes and plantings involving the Boy Scouts, local community groups and the public. At one point a bridge, engineered and financed by LASCO, crosses a wide culvert. Besides enjoying views of the lake, users of the trail can watch the gradual construction of a secure, 70-feet high berm north of the open space that is composed of the remnants of automobile plastic and glass.

Industry will continue to play an important role on Whitby's waterfront. By opening up some of their property for public enjoyment and bringing the Waterfront Trail closer to completion, LASCO and Dupont are proving that their long-term plans include the creation of a healthy, accessible waterfront. Their partnership with the Town of Whitby demonstrates that public and private waterfront interests can be accomplished in a spirit of cooperation.

ACTION 3.2

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust:
Waterfront Trail Alignment
Design Guidelines for the Waterfront Trail
Signage Guidelines for the Waterfront Trail
Maintenance Guidelines for the Waterfront Trail
Trail Use Monitoring Study
Waterfront Trail: Liability and Risk Management Issues

Dinsmore, D. 1994.
Waterfront Trail User Study: A Survey of Trail-Based Recreation along the Lake Ontario Greenway

enTRA Consultants Inc. 1994.
Waterfront Trail Demand Analysis Project: Final Report

- Municipal actions and policies to upgrade the Waterfront Trail as opportunities arise should be encouraged. In some cases, this will involve support for local initiatives such as the proposals to link Port Hope and Cobourg with an off-road waterfront trail. In many other places, opportunities will be linked to new developments, such as those identified as areas of change in Map 9.

- Trail use will be regularly monitored by municipalities, with analysis and reporting by the Trust, to detect and respond to any problems as they emerge, and to respond to changing numbers and patterns of use and user expectations.

- As trail use patterns emerge, communities and local businesses will find opportunities to respond to local needs for related services such as parking, washrooms, equipment rentals, food and accommodation, provided in a manner which ensures that local neighbourhoods and environmentally sensitive areas are not adversely affected.

- The active use of the trail will be encouraged through outreach programs that will reach beyond waterfront communities, sponsoring of trail-related events, promotion of attractive destination points along the trail, and encouragement of trail-related "packages" of itineraries and activities oriented to specific user groups.

Don Bell, Waterfront Regeneration Trust

Waterfront Trail, Colonel Sam Smith Park

- Connections will be encouraged to other trail systems, including connections towards Kingston in the east, the Seaway Trail along the south shore of Lake Ontario in New York State, and a number of other inter-regional trails, both existing and proposed (see Map 1).

Related implementation mechanisms in Chapter 4:
A.1, A.6, B.1, B.2, C.1, C.3

Action 3.3:

Develop public understanding of waterfront processes and values

In large measure, the waterfront has been degraded in the past not through malicious intent, but through ignorance of the consequences of many individual decisions. Support for the governmental and individual actions necessary for its renewal will come only with a broader understanding of the values of the waterfront, and how it functions.

Examples of progress to date:

- A *Greenway Interpretation Master Plan* has been developed for the waterfront, with a central theme being the nature of change – past, present, and future – that links the natural and cultural heritage of the area to the regeneration of the Lake Ontario Waterfront. This Master Plan identifies sites with interpretive potential, a range of interpretation methods, and the messages to enhance public understanding and enjoyment that can be conveyed at each.

- A number of existing programs include themes relevant to the waterfront, such as local museums, historic brochures and walking tours, park interpretive programs, generating station information programs, and the CN Tower Ecodek exhibit. The *Guidebook to the Waterfront Trail*, the thematic guides, and trail signage will also help develop public understanding of the waterfront.

- Several of the background reports and toolkit items can provide information to assist in public understanding, including descriptive models of the biological and physical processes of the north shore, and the historical demographic study *Who Are We?*, which provides an overview of the diversity of peoples associated with the waterfront.

Interpretive walks

ACTION 3.3

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust. 1995.
A Guide to the Waterfront Trail: Explore Yesterday, Today and Tomorrow along the Shores of Lake Ontario

Lord Cultural Resources Planning & Management Inc. 1995.
Lake Ontario Greenway Interpretation Master Plan

Montgomery, D., and R. White, 1994.
Who Are We? Changing Patterns of Cultural Diversity on the North Shore of Lake Ontario

Steps to come:

- A broad range of interpretive initiatives will be developed along the waterfront, from simple plaques and signs to major educational centres such as the proposed Interpretation Centres at Oshawa Second Marsh, the Rouge Valley, and Red Hill Creek in Hamilton. The draft *Greenway Interpretation Master Plan* suggests an initial list of "meaningful places" where interpretive facilities could be developed relatively quickly:

  - Red Hill Valley
  - Burlington Beach
  - Rattray Marsh
  - Lakeview Thermal Generating Station
  - Colonel Sam Smith Waterfront Park
  - Mouth of the Humber
  - Ontario Place
  - Toronto's Inner Harbour/Original Town of York
  - Don Valley Brickworks
  - Second Marsh
  - Presqu'ile Provincial Park

- Existing interpretive materials and programs, such as those at provincial parks along the waterfront, should be reviewed to ensure that they incorporate an awareness of broader waterfront issues and the *Interpretation Master Plan* waterfront theme of change over time.

- Additional waterfront thematic guides should be developed, on such topics as landscapes, local history, and Anishnaabeg (First Nations) history. Local interpretive walks and events along the waterfront should be encouraged as effective, interactive ways of increasing public knowledge and awareness.

- Schools within the Greenway should be encouraged to incorporate into their classes examples of local heritage resources and waterfront physical and biological processes, as part of a bioregional theme that is included in the provincial curriculum.

- Online computer services such as Internet and World Wide Web should be explored as another method of increasing public understanding of the waterfront, by providing access to information, maps, and background data.

Related implementation mechanisms in Chapter 4: A.6, C.1, C.3

Action 3.4:
Develop community participation in waterfront projects

Involvement in tangible projects brings more than just the direct results of a new trail or trees planted; it also brings greater awareness and commitment for the entire regeneration process. Most local support and participation in projects is expressed through a wide array of community groups, from naturalists' societies and service clubs to Chambers of Commerce and ratepayer associations. The involvement of these organizations can be a powerful force in promoting and implementing Greenway objectives and projects.

Examples of progress to date:

- A citizen group with specific interests in the Greater Toronto waterfront, Citizens for a Lakeshore Greenway (CFLAG) has been active since 1991 with a mandate to "advocate the public interest in ensuring public access and use of the waterfront". This umbrella group currently has chapters in Toronto, Etobicoke and Scarborough, with additional chapters planned in other lakeshore communities.

- Our Waterfront, a coalition of heritage, environmental, resident and ratepayer groups, has begun an ambitious project of cataloguing and mapping the heritage of the Metro Toronto region, showing what the waterfront and the region was like at various points in its history.

- Local service clubs have provided considerable financial support for waterfront projects in their communities in such areas as Cobourg, Oshawa, Whitby, Ajax, Pickering and Brighton.

- Corporate landowners have been involved in trail construction and habitat restoration projects in Oshawa, Whitby, and Mississauga, and have supported the development of the waterfront boat launch facility in Haldimand.

- Metro Toronto Zoo's Adopt-A-Pond program links schools with existing wetlands along the waterfront and elsewhere, and involves students in monitoring and studying wetlands.

- Individual community groups have led the way on many beneficial projects which contribute greatly to the Greenway, such as the purchase of a significant waterfront forest by the Thicksons Woods Association, the development of educational materials and interpretive programs by the Friends of Presqu'ile, the involvement of Citizens Concerned about the Future of the Etobicoke Waterfront (CCFEW) in restoration and interpretation projects at Colonel Sam Smith Park, the active involvement of many groups in hosting waterfront festivals and events, the involvement of Business Improvement Associations in revitalizing historic downtown cores in many Greenway communities, and the sponsoring of habitat restoration projects in the lower Don Valley and elsewhere.

Lisa Ohata, Waterfront Regeneration Trust

Haldimand Boat Launch

ACTION 3.4

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust, 1995.
A Tourism, Recreation and Economic Strategy for the Lake Ontario Greenway
Heritage Shores: Cobourg, Port Hope, Rice Lake - The Making of a Destination Area

Hilts, S., and B. Reid, 1993.
Creative Conservation: A Handbook for Ontario Land Trusts

- Community-based efforts are central to the planning of such waterfront renewal projects as Trenton's Waterfront Renaissance and Burlington's Downtown Waterfront East project.

- The four waterfront municipalities of Port Hope, Cobourg, Hope Township and Hamilton Township, together with the Trust, have undertaken a community-based strategic planning exercise to improve local quality of life and to act on economic opportunities related to tourism. While still in early stages of implementation, this process has produced a cycling guide for the area, coordinated planning for new trails, an artist's co-op, and use of heritage buildings, and joint sponsorship of a travel advertisement. This process is described in the toolkit as a model for others. (See Action 4.4)

Steps to come:

- Both Scouts Canada and the Girl Guides of Canada are planning to use Lake Ontario Greenway badges to encourage the involvement of youth members in Greenway-related projects.

- Local coordination of waterfront restoration and renewal projects, similar to the Port Hope-Cobourg initiative, can be used elsewhere to identify needs and project sites, provide guidance on activities, and organize local involvement effectively.

- The involvement of special interest groups can identify opportunities for community action in such areas as cycling networks, tourism development, adopt-a-park programs, and habitat restoration projects. One aspect with particular potential for growth is partnership arrangements between government agencies and community groups, in such areas as public education and habitat restoration. Programs such as Project Tree Cover, whose goal is planting 16 million trees on private land in Ontario, could be applied along the waterfront.

- There is considerable potential for increasing the voluntary involvement of developers and industry in community-based waterfront projects, particularly as more of them come to understand that an attractive and healthy waterfront is good for business in the communities of which they are part.

- New land trust organizations should be encouraged within the Greenway to assist in protecting and restoring significant lands. The background document *Creative Conservation* provides information on the development and management of these community organizations.

Related implementation mechanisms in Chapter 4: B.3, C.2, C.3

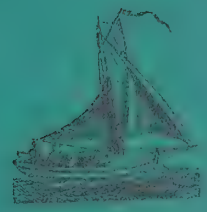
Action 3.5:
Strengthen traditional waterfront festivals and celebrations

Waterfront festivals and events promote enjoyment and appreciation of waterfront values, bring communities closer together, and provide opportunities for education.

Examples of progress to date:

- At least 44 annual events, festivals, and community activities currently occur along the Greenway, ranging from waterfowl viewing weekends at Presqu'ile Provincial Park, to cultural events at Harbourfront, to annual waterfront festivals in Oakville and Trenton. Several successful events are fairly recent in origin, with potential for added events in future.

- Existing events and festivals are listed, with general information about their theme, location and timing, in the *Guidebook to the Waterfront Trail* and annual activity booklets.



Oakville Waterfront Festival: A Community Celebration

During the warm months the Lake Ontario waterfront provides a sparkling backdrop to sailing regattas, outdoor theatre, jazz concerts, art fairs, and puppet shows. For one weekend each June all these activities and more take place under the banner of the Oakville Waterfront Festival. Attracting hundreds of thousands since it began in 1992, the Festival brings communities together to celebrate the waterfront and provides a boost for the local economy. The variety of entertainment staged in Coronation Park and around the harbours of Bronte and downtown Oakville guarantees a good time for all.

The Festival was organized by a committee of civic-minded residents and business leaders to stimulate tourism. Today it also highlights the diverse cultures of the region and the striking nature of the waterfront. Corporate sponsorship and the contributions of small-businesses have made it possible to provide a variety of quality attractions, including headline musical acts, classical and folk concerts, theatre and dance, fireworks, and canoe races (with and without paddles!). There are as many things to do as there are to see. Wall climbing, three-on-three basketball, gymnastics, and line dancing are just a few of the heart-pumping activities. Scenes, crafts, and stories from Oakville's past can be enjoyed in the Heritage Hamlet. Children can decorate cookies, paint faces and murals, dance and tumble, or watch magic tricks in their own village. Service clubs, non-profit organizations, and cultural groups contribute many of the festival's family attractions. In return they generate funds for community projects and services.

The Oakville Waterfront Festival is a celebration, not just of place but of family and community. Its huge success is a result of a citizen/business partnership, the dedication of hundreds of volunteers, and the wide range of events and activities they generate. In just a short time it has become a community tradition and a model for other festivals along the Lake Ontario Greenway.

Action 3.5 Sources of Additional Information:

Waterfront Regeneration Trust. 1995. *A Guide to the Waterfront Trail : Explore Yesterday, Today and Tomorrow along the Shores of Lake Ontario*

Activities Calendar

Port Hope Chamber of Commerce

"Float your Fanny down the Ganny," Port Hope

Steps to come:

- Additional information gathering and research is needed on the nature and motivation of participants in various events and festivals, such as the needs and interests of special groups (e.g. seniors, cultural groups, the disabled), or whether people are looking for more opportunities to participate, to be entertained, or to learn.
- Information exchange among event organizers along the waterfront will be helpful in strengthening organizational and promotion skills, and in learning from other's experience.
- Joint promotion or cross-promotion between events could assist in attracting a broader audience and in minimizing costs, as could the development of packages of dining, accommodation and other attractions linked to special events.
- In some places, development of suitable event facilities in proximity to the waterfront would add value and attractiveness to future events and festivals.
- The Waterfront Trail launch in the spring of 1995 could become the first of an annual coordinated waterfront-wide event, as a way of celebrating the inter-connected nature of the waterfront. Planning of a coordinated annual Greenway event and additional local events and festivals should start with an exploration of potential market demand and feasibility.

Related implementation mechanisms in Chapter 4: C.3

Action 3.6:
Recognize changing populations in planning waterfront recreation

The character of the communities along the Greenway has always been in a state of change, and continues to change. One prominent change is in the demographic profile – as the population bulge of "baby boomers" exerts its influence, a much higher percentage of waterfront residents fall within older age groups. A second, equally important, factor, is the ethnic diversity of the region's peoples, which has become more pronounced in recent years, especially in the Metro Toronto area. Meeting the needs of this changing population will be a priority in coming years.

Examples of progress to date:

- The *Who Are We?* study sponsored by the Trust provides a historical overview of the role of ethnic diversity within the Greater Toronto Bioregion, and a profile of the character of the existing population.

- Several existing events and facilities along the waterfront have strong ethnic ties, such as Toronto's Festival Caravan, Caribana and Dragon Boat races, and the Plast Ukrainian children's camp in Haldimand Township. As well, the cultural programs associated with Harbourfront incorporate a broad range of ethnic themes.

Steps to come:

- Municipalities and recreation managers along the waterfront should monitor and respond to changes in recreational demand associated with an aging population, such as increased demand for low-impact exercise and learning experiences, and less for arenas and sports fields.

- Waterfront managers should seek opportunities to consult with and learn about recreational needs and desires from various ethnic groups within their communities, including both those who use the waterfront now and those who seldom visit.

Related implementation mechanisms in Chapter 4: B.1, C.1

ACTION 3.6

SOURCES OF ADDITIONAL INFORMATION:

Montgomery, D., and R. White. 1994.
Who Are We?: Changing Patterns of Cultural Diversity on the North Shore of Lake Ontario

ACTION 3.7 SOURCES OF ADDITIONAL INFORMATION:

Port Hope Dept. of Parks, Recreation and Culture, et al.
Walk it: walking trails of Port Hope, Cobourg and district areas.

Action 3.7:
Link recreational resources with health promotion

Recent years have seen a much greater emphasis on the concepts of wellness and disease prevention as an essential part of the health care system. The Waterfront Trail and other recreational spaces along the Greenway can contribute greatly to active living and health promotion, because they provide excellent opportunities for safe and enjoyable exercise close to home, and at low cost. As well, the soothing effects that many people experience in quiet contemplation at the water's edge may contribute to the mental health of an increasingly crowded population.

Examples of progress to date:

- The Port Hope Department of Parks, Recreation and Culture, in partnership with the Haliburton Kawartha Pine Ridge District Health Unit, the Ruth Clarke Activity Centre for Seniors, and others, has published a booklet describing walks around the Port Hope area, including the waterfront, as a way of promoting healthful exercise.

Steps to come:

- Trails and waterfront access can be incorporated into new developments in ways that encourage people to use them regularly as part of their daily routine. With the provision of parking and transit access wherever possible, active use by people from other areas can also be encouraged.

- Special events by health associations (e.g. arthritis, heart and stroke) to promote healthy lifestyles and for fundraising can make use of attractive waterfront locations.

- Trail guides and other publications related to the waterfront could include a range of health promotion ideas.

Related implementation mechanisms in Chapter 4: A.1, A.3, C.3

Action 3.8:
Increase accessibility to all members of the community

The waterfront should be accessible to everyone in the community, including those with visual, hearing, comprehension, and/or mobility restrictions. In some places, this requires special consideration of physical conditions, such as making sure that boardwalks are wheelchair-accessible. Ensuring accessibility also means that waterfront users should feel safe, and are not placed in situations where they are vulnerable to criminal activity. Women and the elderly are especially likely to avoid waterfront settings if they feel their personal security is at risk.

Increasing accessibility and enjoyment for people with disabilities is an important objective for the waterfront. While the entire Waterfront Trail is not suitable at this time for people with disabilities, major sections will be fully accessible.

Examples of progress to date:

- Most of the paved or boardwalk off-road portions of the Waterfront Trail provide increased accessibility to the waterfront for people with impaired mobility.

- Some waterfront parks have been designed to include features of particular value to people with various kinds of disabilities, such as Rosetta McClain Gardens in Scarborough, which includes raised planter beds, adjustable benches, a multi-sensory fountain, and scented gardens.

Robert Merrick, Waterfront Regeneration Trust

Cobourg Waterfront Promenade

Irene Rota, Waterfront Regeneration Trust

Lakefront Promenade Park, Mississauga

Action 3.8

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust:
Accessibility Audit (Checklist)

Steps to come:

- The Waterfront Regeneration Trust is sponsoring a pilot accessibility audit of a section of the Waterfront Trail, to examine its suitability for people with a broad range of mobility impairments and recommend improvements where necessary. Based on this pilot, municipalities will be encouraged to carry out similar accessibility audits on their sections of the Trail.

- In future design or upgrading of waterfront parks, public agencies should ensure they are accessible to people with visual, hearing, comprehension, and/or mobility restrictions. Consideration should be given to signage, surfaces, handrails, seating, lighting, textures, scented plants, colour and fountains. These design features can also result in more interesting places for children and the general public.

- Waterfront park design and management should consider safety and security elements such as lighting, emergency phones, landscaping and policing to reduce incidents of crime and to improve the feeling of security for women and the elderly. Trail lighting should be carefully designed to ensure it does not encourage a false sense of security and lure trail users into unsafe areas.

Related implementation mechanisms in Chapter 4: A.1, C.2

City of Etobicoke

Len Ford Park, Etobicoke

OBJECTIVE 4

Promote economic activities and employment on the waterfront that are compatible with other Greenway objectives.

In an economic sense, the waterfront is a valuable place, offering special advantages for industries that rely on water for transport or cooling, and an attractive setting for residential and associated commercial developments. In the past, the demands of economic development often took precedence over the ecological and community values associated with the waterfront. The challenge and the opportunity now is to encourage economic growth that is compatible with environmental restoration, that allows waterfront access, and that enhances the quality of life for all residents in waterfront communities.

Economic opportunities can focus on the lifestyle and image advantages of a waterfront setting, the extensive transportation infrastructure, and the substantial economic base already in place. In large measure, new development should reinforce nodes of industrial, residential, and commercial development, where economic activities can be mutually supportive, and where new jobs can be located close to home. Tourism has particular potential, based on the diverse mix of natural and cultural assets, the special appeal of an "inland sea" setting, and the established reputation of the Toronto area as a safe and attractive destination.

Action 4.1:

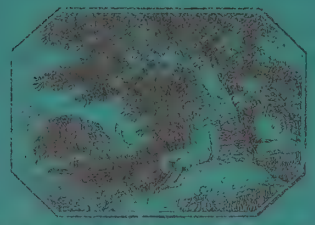
Enhance the role of existing and new economic activities

The waterfront and adjacent lands have long been major centres of employment, and will continue to be. Traditionally, that employment centred around harbours, shipping and storage, goods-producing industries, offices and retail, and agriculture in the eastern part of the Greenway. However, as outlined in Chapter Two, the nature of that employment is rapidly changing as existing employers update their processes and products and adapt to changing markets and conditions, and new industries and enterprises emerge.

To protect future economic opportunities, communities and employers should recognize the need to adapt to changing markets and to changing expectations for waterfront locations. This may mean adopting a greater mix of uses than occurred previously, with new uses located alongside existing uses, or with buildings' functions changing in accordance with market demands and appropriate development standards. Good urban design will become increasingly important, to ensure that buildings are appropriate to a waterfront setting and to their uses.

To achieve this objective, a number of actions are planned or underway:

- **4.1 Enhance the role of existing and new economic activities.**
- **4.2 Ensure appropriate location and design of new development.**
- **4.3 Monitor and respond to changing patterns of harbour use.**
- **4.4 Identify and develop tourism/recreation destination areas.**
- **4.5 Develop new waterfront attractions.**
- **4.6 Develop joint packaging and marketing of themed waterfront experiences.**
- **4.7 Reduce conflicts between transportation corridors, waterfront access, and sense of place.**



The Toronto Islands: A Home For People and Nature

There are unique and special places all along the North Shore, but few are cherished like the Toronto Islands. The Islands' natural and cultural features are invaluable community assets that long ago were deemed worthy of preservation and protection. But the Islands cannot be frozen in time or isolated from the community that enjoys its attractions. Like other parts of the waterfront (see Map 9) it is an area of change. For those involved in the regeneration taking place, respect for the Islands' character and sensitivity is first and foremost in their minds.

In December 1993 provincial legislation created the Toronto Islands Residential Community Trust (TIRCT) to protect and manage the existing residential community on Algonquin and Ward's Islands for 99 years. To ensure the economic viability of the community, three acres of land were added to the existing thirty-three acres so that eighty new units of co-op housing and thirty units of limited equity ownership housing could be built. Anticipating the growth of the community, the Toronto Island Residents' Association and the Metro Toronto and Region Conservation Authority each examined the feasibility and impact of building new homes. They concluded that the new housing would have no significant environmental consequences, nor negative social impacts. When Bill 61 was passed, creating the TIRCT, the community was ready to draft its plan for regeneration.

Guiding the development of the community site plan was a set of core principles that calls for new housing that fits into the existing historic community, respects and protects the natural environment, and creates a friendly community for residents and visitors. The TIRCT is committed to ensuring that the street pattern, scale, and architecture of the new development is in keeping with the character of the existing community. The three Environmentally Sensitive Areas nearby will not be touched by the new homes, with development taking place only on previously disturbed land. The sacrifice of a few significant trees poses no threat to the important tree canopy. As for the small trees on the site, they will be relocated near the lagoons to form natural areas. The community's recreational and common areas will also be protected.

Having been assigned steward of the Toronto Islands community for 99 years, the TIRCT understands the challenge of balancing community and environmental health. Its careful management of the community's growth is a good sign that this and future periods of change will pass smoothly.

Examples of progress to date:

- There has been renewed interest recently in the Port of Toronto industrial area, with construction underway in the past year of recycling projects by Harkow Industries and National Rubber, and of an office and works yard for Toronto Hydro, using innovative techniques to remediate the site. (See Action 2.6)

- Several industries along the waterfront have demonstrated their willingness to incorporate the Waterfront Trail and ecological stewardship on their lands, including the General Motors headquarters building in Oshawa, Darlington Nuclear Generating Station, the PetroCanada refinery in Clarkson, and Dupont Canada and Lasco Steel in Whitby.

Steps to come:

- The importance of existing, new and expanding industrial, commercial, and agricultural areas along the waterfront as employment generators should continue to be recognized, and these uses should be protected as much as possible from interference or negative effects from recreational uses or adjacent waterfront developments through maintenance of buffers or other means. In the eastern section of the Greenway, this also involves protecting agricultural operations from the nuisance effects of scattered rural residential developments.

Suzanne Barrett, Waterfront Regeneration Trust

General Motors headquarters, Oshawa

- The Waterfront Regeneration Trust will work with the Ministry of Economic Development and Trade and the other ministries involved to determine which of the 28 economic strategies being developed by the Province are applicable to the Lake Ontario Greenway.

- All waterfront industries should be able to expect that environmental regulations will be enforced fairly and fully, so that their competitors are not permitted to gain an advantage, for example by exceeding emission standards.

- In recognition of the importance of changing technologies in future economic and employment prospects, waterfront communities and industries should be encouraged to create electronic links to each other, to build on the concentration of knowledge, skilled labour, and infrastructure already present within the Greenway.

- Waterfront municipalities should maintain the flexibility necessary in their policies to respond to a rapidly changing economic environment; encourage existing and new businesses to recognize trends in industrial, commercial, and residential development; and address the implications of these trends in their planning documents. They should also recognize the importance of such factors as the obsolescence of the industrial building stock in some parts of the waterfront, which influences re-development decisions.

- In recognition of the attractiveness of waterfront communities for home-based office workers, municipalities should review their policies to remove unnecessary restrictions to this growing form of economic activity.

- Public utilities with a waterfront location that are necessary to sustain economic growth, such as electrical generating stations and water and sewage treatment plants, are expected to contribute to other waterfront objectives such as public access and habitat restoration in their design and management.

- Waterfront industries should be encouraged to provide interpretive and educational opportunities about their operations to other waterfront users, to assist in explaining the importance of their role in that location.

Related implementation mechanisms in Chapter 4: A.1, A.2, B.1, C.2

ACTION 4.1

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust:
A Tourism, Recreation and Economic Strategy for the Lake Ontario Greenway

Metropolitan Toronto 1994.
The Economic Forum on the Future of the Greater Toronto Area

Ronald G. Richards and Associates, 1994.
Profile of Waterfront Development Activity and Opportunities - Burlington to Trenton, Ontario

Action 4.2:
Ensure appropriate location and design of new development

Much of the stress affecting the waterfront and the Greenway is directly or indirectly related to the pattern of urban development that has become the norm in the Bioregion over the past 30 years. This tradition of low-density urban sprawl devours immense acreages of farmland and natural habitat, generates large quantities of stormwater flowing into tributaries, overwhelms the character and traditions of small communities, impairs regional air quality, and locks in a lifestyle dependent on environmentally-damaging automobiles.

On the other hand, more compact communities together with re-development and intensification of existing urban centres support transit and cycling, reduce infrastructure costs, are less resource-consumptive, support commercial activity to sustain downtown cores, and often act as a lever to restore degraded sites to active uses. Since intensification usually takes place within or near established neighbourhoods, sensitive design and open review processes are essential to meet community concerns.

Examples of progress to date:

- An analysis of alternative patterns of development to meet a projected population increase to 6 million by the year 2021 has been carried out by the Office for the Greater Toronto Area, leading to recommendations that a more compact "nodal" form of development be adopted in future. In large measure, this approach has been incorporated into the approved, adopted or proposed Official Plans of metropolitan and regional municipalities within the GTA. However, a large number of planning decisions already made and many development proposals still under consideration do not reflect this approach.

- The *Comprehensive Set of Policy Statements* issued by the Province in May 1994 require areas proposed for development to have a compact form, a mix of uses, and densities that efficiently use land, infrastructure and public service facilities.

Urban sprawl

Clustered development

- Adoption of guidelines on alternative development standards, after consultation on the draft guideline *Making Choices* released by the Ministries of Municipal Affairs and Housing, will provide more flexibility in future urban design and residential standards.

- A number of projects are being planned across the Greenway which support this approach, in such areas as Burlington Downtown East, Port Credit in Mississauga, parts of the Etobicoke Lakeshore area, Toronto Railway Lands, Port Union Village in Scarborough, and the Cobourg Waterfront area.

Steps to come:

- Wherever appropriate within the Greenway, public planning and investment should encourage and support the intensificiation of urban core areas, the development of mixed-use areas with housing and employment in close proximity, the approval of appropriate land uses to finance the restoration of degraded sites, and the expansion of efficient transit systems to service waterfront communities. Careful attention to urban design and community involvement will be important to avoid negative effects on natural or cultural heritage features and to ensure that new and restored buildings and spaces complement other waterfront uses.

Suzanne Barrett, Waterfront Regeneration Trust

Beaches boardwalk, Toronto

- Since land available for development along the waterfront is limited, development of new economic activities (including residential areas) should give priority to uses that are clearly water-dependent or water-enhanced. Wherever the water's edge is in a natural state (i.e. without protection works), new buildings and other facilities should be set back sufficiently to retain natural shoreline features and to provide public access where appropriate.

- Former industrial lands within urban areas should be promoted for re-use for economic activities, using an assessment of their environmental conditions to determine the range of acceptable uses for individual sites.

- New residential growth in waterfront communities should conform to the compact "nodal" form required by Provincial policies, and should particularly be encouraged to strengthen downtown core areas by contributing to a critical mass of economic activity to support commercial expansion.

- Where new development is approved within rural sections of the Greenway, future planning should encourage a compact clustered form of development, and discourage linear waterfront strip development which may require shoreline protection works in future.

- Development and marketing of tourism attractions along the waterfront should encourage a "linked-nodal" pattern, with most visitors concentrated in selected destination areas that can support high levels of use rather than dispersed throughout the Greenway.

Related implementation mechanisms in Chapter 4: A.1, A.6, C.1, C.2

ACTION 4.2

SOURCES OF ADDITIONAL INFORMATION:

The Landplan Collaborative Ltd. 1994. ***Waterfront Experiences: an Analysis of Waterfront Experiences for the Lake Ontario Greenway Strategy*** **(draft)**

Ontario. Ministry of Municipal Affairs. 1994. ***Comprehensive Set of Policy Statements***

Berridge Lewinberg Greenberg Ltd., Marshall Macklin Monaghan Limited, and REIC Ltd. 1994. ***Making Choices: Alternative Development Standards Guidelines*** **(draft)**

Berridge Lewinberg Greenberg Ltd. N.d. ***Shaping Growth in the GTA: A Commentary Report***

Landplan Collaborative

Whitby Harbour

Landplan Collaborative

LaSalle Park Marina, Burlington and Hamilton Harbour

Action 4.3:
Monitor and respond to changing patterns of harbour use

As the economic base of the Greater Toronto Bioregion changes, the patterns of use of traditional harbour areas are also changing, with a greater emphasis on recreational boating. Harbour areas have long served as focal points for economic activity, and that traditional role can be renewed through coordinated action.

Marine transport in the Great Lakes and along the St. Lawrence Seaway to the ocean will continue to be an important service for the region although conditions may change. Prevailing trends in world shipping have tended to by-pass the ports and harbours of the region in the recent past, but the 1994 upturn in tonnage shipped through the Seaway, and the steady increase in the Port of Hamilton's business, are signals that the community should remain alert to marine transportation developments, and be able to capitalize on them when opportunities arise and the economics are right.

Examples of progress to date:

- A substantial part of the land base and facilities of the Toronto Harbour Commission (THC) has been transferred to the City of Toronto for industrial and parkland uses, and the THC's role has been limited to managing harbour functions and the Toronto Island Airport. A major recreational marina has been developed in the outer harbour in recent years.

- Both the City of Oshawa and the Oshawa Harbour Commission have undertaken studies of the potential future uses of lands within the Port of Oshawa, and of the implications of competition from the St. Marys port facilities. Despite considerable discussion, no clear resolution of land use issues in the harbour area has yet emerged.

- Industrial use of Hamilton Harbour has grown in recent years in terms of volume, largely linked to the steel industry. Parts of Hamilton Harbour have been re-developed for recreational marinas and waterfront open space.

- A 1994 *Assessment of Marina Infrastructure and the Boating Market* sponsored by the Trust identified relatively limited requirements for additional recreational boating facilities along the Hamilton to Belleville shoreline over the next decade.

- Private sector entrepreneurs continue to search for profitable ways to link waterfront communities by marine craft – for regular passenger commuters (perhaps linked to the GO system) and/or pleasure cruises. Both north shore and cross-lake routes continue to be explored.

Steps to come:

- Transport Canada and the Province of Ontario should periodically review regional harbour needs along the Lake Ontario shoreline, including consideration of:

  - trends in harbour usage and products handled within the three federal ports;

  - the broader context of changes in global and St. Lawrence Seaway shipping patterns;

  - an assessment of future needs and opportunities;

  - identification of ways to maximize economic and employment spinoffs from harbours;

  - a review of potential land base and organizational requirements for future operations.

- The Waterfront Regeneration Trust has been asked to assist the City of Oshawa in its deliberations on the future of the Oshawa waterfront, including the Oshawa Harbour.

- Most harbour facilities along the waterfront, both industrial and recreational, require routine dredging to maintain their depth. A jointly-sponsored study would be beneficial to review the effectiveness of various dredging techniques, the potential for design changes to reduce future dredging requirements, and the potential of mitigating techniques to reduce the environmental impacts of routine dredging.

Related implementation mechanisms in Chapter 4: A.3

ACTION 4.3 SOURCES OF ADDITIONAL INFORMATION

The Randolph Group, 1994.
Assessment of Marina Infrastructure and the Boating Market: 1994 Update for Hamilton to Belleville Shoreline, Final Report

Ronald G. Richards and Associates, 1994.
Profile of Waterfront Development Activity and Opportunities - Burlington to Tremont, Ontario

Landplan Collaborative

Bronte Harbour

Action 4.4:
Identify and develop tourism/recreation destination areas

One of the best opportunities to strengthen the economic base of the waterfront, both on the central waterfront and outside major urban centres, is the tourism and recreation sector. Some 7.3 million people live within a two-hour drive of the waterfront (see Map 8), and changing trends in social values and recreational use suggest that the waterfront is well-positioned to attract greater visitation. Much of that visitation should be encouraged to focus on selected tourism/recreation destination areas that are designed to accommodate such use with little environmental or community disruption.

Examples of progress to date:

- The federal and provincial governments, Metro Toronto, and the City of Toronto have identified the central waterfront as a major asset and attraction in the formulation of tourism strategies.
- These governments have also invested heavily in upgrading and expanding facilities on the central waterfront, including the Metro Toronto Convention Centre (Province), Exhibition Place (Metro, Province, Federal), Ontario Place (Province with Molsons), the CN Tower (CN Real Estate, Federal, and private sponsors), and Harbourfront (City, Province, Federal).
- Private sector interests including theatre, restaurant, retail and club owners, and related investors are combining to bring physical improvements and enhanced promotion to the Entertainment District in downtown Toronto. The arts and cultural community keeps Toronto in the forefront with high-quality productions and exhibitions that attract both local citizens and visitors. Citizen support for heritage protection has helped to ensure that some of the central waterfront's splendid stock of heritage buildings is protected, maintained, and used appropriately to maintain an attractive setting.

- Pilot projects to assist in developing a critical mass of visitor attractions are underway in the Port Hope-Cobourg area and the Bronte Harbour area. The Port Hope-Cobourg project is described in the toolkit as an example of a community-based tourism strategy and action plan. (See Action 3.4)

- A number of communities have taken advantage of the Canada-Ontario Infrastructure Works Program to implement ambitious waterfront plans related to tourism/recreation destination areas, such as the new waterfront development in the Bronte Harbour area.

- The TREO report in the toolkit includes an analysis of resident and tourist markets, opportunity analyses for commercial cores, market trends, trends in tourism products, and a study of several comparable waterfronts, trails and greenways to document successful techniques to develop attractive, affordable, and functional tourism/recreation destinations in waterfront settings.

Heritage Shores: Communities Working Together on a Tourism Strategy

The Lake Ontario Greenway Strategy emphasizes community-based tourism initiatives and intergovernmental co-operation. It is in this context that the communities of Port Hope, Cobourg and Hamilton Township – with Hope Township assuming an observer role – have been undergoing an intensive, community-driven strategic development process since January 1994, focussing on increasing visitation to the area while at the same time enhancing the quality of life for local residents.

A co-ordinating committee, made up of councillors, municipal staff, heritage and environmental organizations, business groups and individuals, adopted a two-pronged approach: the development of a long-term strategy and short-term projects that keep commitment and enthusiasm high.

In developing the long-term strategy, stakeholder workshops and meetings were held over the past year, and over 250 questionnaires were sent to individuals, businesses and other community organizations to solicit additional input.

The co-ordinating committee can take pride in a number of short-term accomplishments, including the development of a cycling guide, and placement of a co-operative advertising insert in a leading national newspaper. A joint venture involving a tour of local artists and artisans is being developed.

A competition was held to find a distinctive name for the area. The result was "Heritage Shores," reflecting the natural and cultural heritage of the shores of Lake Ontario and Rice Lake.

The process has already acted as a catalyst to new partnerships among and within the communities and provides a more flexible approach to identifying and supporting community priorities. It has also given residents an opportunity to participate in the development of their community and an appreciation of the assets that can be mobilized for locally sustainable employment.

Tourism/Recreation Destination Areas

Primary waterfront tourism/ recreation destination areas are defined by:

- **their existing or emerging ability to attract significant numbers of visitors (including overnight visitors) in the context of the surrounding region;**
- **the presence (or near-term planning) of events, services, and facilities to support visitors;**
- **the presence of community-based planning to further develop tourism visitation from beyond the local area.**

Secondary waterfront tourism/ recreation destination areas are defined by:

- **existing or emerging ability to attract day-use visitors from beyond the Greenway;**
- **the presence of facilities for specialty uses such as marinas or beaches;**
- **limited future plans to attract additional visitors from beyond the local area.**

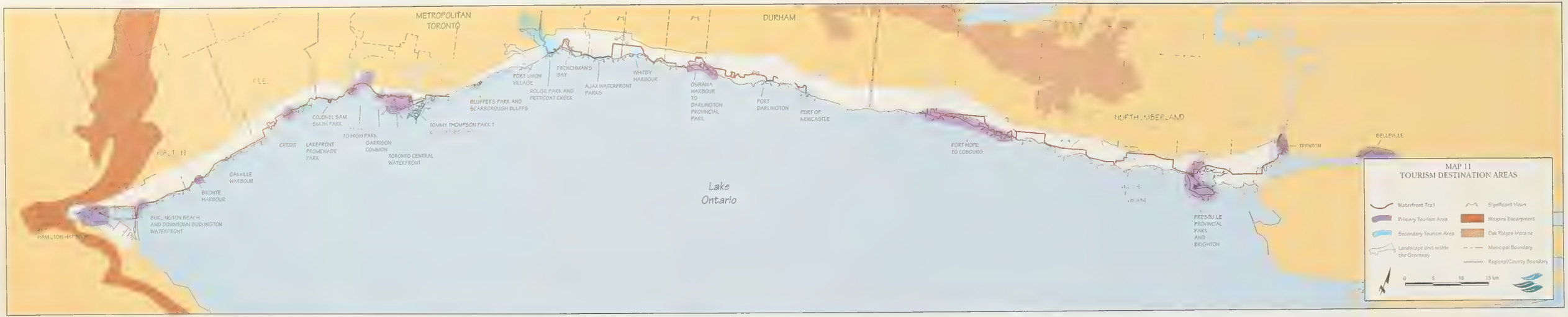
Metro Toronto Convention and Visitors Association

Harbourfront

Steps to come:

- In decisions regarding future investments in tourism/recreation infrastructure and marketing, the following areas will be considered primary waterfront tourism/recreation destination areas (see Map 11):

  - Royal Botanical Gardens and Hamilton Harbour
  - Burlington Beach and Downtown Burlington Waterfront
  - Bronte Harbour
  - Port Credit
  - Humber Bay to High Park (including the Motel Strip)
  - Garrison Common
  - Toronto Central Waterfront (including Toronto Harbour and Toronto Islands)
  - Oshawa Harbour to Darlington Provincial Park
  - Port Hope to Cobourg
  - Presqu'ile Provincial Park and Brighton
  - Trenton and Belleville


METROPOLITAN TORONTO
DURHAM
NORTHUMBERLAND
Lake Ontario
HAMILTON HARPOUR
BURLINGTON BEACH AND DOWNTOWN BURLINGTON WATERFRONT
BRONTE HARBOUR
OAKVILLE HARBOUR
CREDIT
LAKEFRONT PROMENADE PARK
COLONEL SAM SMITH PARK
TO HIGH PARK
GARRISON COMMON
TORONTO CENTRAL WATERFRONT
TOMMY THOMPSON PARK
BLUFFERS PARK AND SCARBOROUGH BLUFFS
FORT UNION VILLAGE
ROUGE PARK AND PETTICOAT CREEK
FRENCHMAN'S BAY
AJAX WATERFRONT PARKS
WHITBY HARBOUR
OSHAWA HARBOUR TO DARLINGTON PROVINCIAL PARK
PORT DARLINGTON
PORT OF NEWCASTLE
PORT HOPE TO COBOURG
TRENTON
BELLEVILLE
PRESQU'ILE PROVINCIAL PARK AND BRIGHTON
MAP 11
TOURISM DESTINATION AREAS
Waterfront Trail
Primary Tourism Area
Secondary Tourism Area
Landscape Unit within the Greenway
Significant Views
Niagara Escarpment
Oak Ridges Moraine
Municipal Boundary
Regional/County Boundary
0
5
10
15 km

- The following will be considered secondary tourism/recreation destination areas (see Map 11):

  - Oakville Harbour
  - Lakefront Promenade Park
  - Colonel Sam Smith Park
  - Tommy Thompson Park to Eastern Beaches
  - Bluffers Park and Scarborough Bluffs
  - Port Union Village
  - Rouge Park and Petticoat Creek
  - Frenchman's Bay
  - Ajax Waterfront Parks
  - Whitby Harbour
  - Port Darlington
  - Port of Newcastle
  - Village of Colborne

- In the communities surrounding primary and secondary tourism/recreation destination areas, future planning processes should encourage discussion of:

  - the nature and extent of visitation desired,
  - opportunities for facility development, theming, and packaging of attractions,
  - the role of residential and commercial development within destination areas,
  - infrastructure and regulatory needs to encourage appropriate development,
  - steps needed to attract private investment within destination areas,
  - approaches to protect and/or integrate natural and cultural heritage,
  - design needs to address parking, increased traffic, and other concerns.

- Within primary and secondary tourism/recreation destination areas, a wide range of funding and leveraging techniques should be employed to implement a mix of public and private projects compatible with community needs and values. Federal and provincial agencies should view these destination areas as locations with both strategic value and local support for tourism development, in considering the future allocation of investment resources.

Related implementation mechanisms in Chapter 4: A.1, C.1, C.2

Action 4.4

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust:
A Tourism, Recreation and Economic Strategy for the Lake Ontario Greenway
Heritage Shores: Cobourg, Port Hope, Rice Lake - The Making of a Destination Area

Curtis Consulting, 1994.
Market Data for Projects along the Lake Ontario Waterfront from Burlington to Belleville.

Tourism Market Trends

A review of tourism market trends by the TREO Workgroup identified the following opportunities related to the Lake Ontario Greenway, which could provide a basis for development of future attractions:

- **A trend to shorter vacations and getaways, closer to home but uniquely different from daily routines, suggests opportunities for packaged "getaway" experiences within the Greenway.**
- **The aging of the population will help spread tourism demand beyond the traditional school holiday season, and will shift outdoor activities towards walking, biking, and golf.**
- **Increased interest in fitness/wellness, the environment and the outdoors will tend to reinforce participation in environmentally-friendly outdoor activities, such as bird-watching.**
- **Concerns about the quality and nature of many current tourism products will lead to growing demand for fulfilling opportunities for learning and personal enrichment that are genuine or unique in their cultural content (i.e. true to the history and traditions of the area).**
- **Increased interest in family and home-based activities suggests growth for family-oriented activities (such as picnicking, biking, fishing) close to home.**
- **Ontario's growing multicultural market has the potential to enhance traditional tourism and recreation activities, and offers opportunities to develop new products to appeal to these users.**

Action 4.5:
Develop new waterfront attractions

Across much of the waterfront, tourism is currently underdeveloped. The attractive setting provided by the water's edge, in concert with the large nearby population and the good base of facilities and infrastructure already present, provide excellent opportunities to expand the economic activity associated with waterfront tourism.

Examples of progress to date:

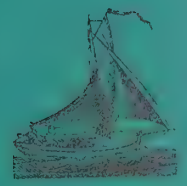
- The review of tourism market trends, undertaken by the Tourism, Recreation, and Economic Opportunities (TREO) Workgroup, identified a number of tourism development opportunities related to the Lake Ontario Greenway.
- A series of tourism industry sector strategies were completed for Ontario between 1991 and 1993; they identify opportunities for growth in the following sectors:
  - transient overnight boating market;
  - attractions, festivals, and events;
  - specialty outdoors products;
  - cultural tourism;
  - overnight and excursion cruise industry.

- The *Competitive Tourism Development Strategy for Metropolitan Toronto*, completed in 1992, identified major strategic tourism thrusts for Metro, as well as identifying product opportunities which included emphasis on the waterfront as a visitor focal point.

- Toronto's central waterfront is emerging as a favoured location for major sports facilities, including the Skydome and a proposed location for the Raptors basketball facility.

- Development of several new attractions is underway along the Greenway, including the Second Marsh Interpretive Centre, renovation of the Capitol Theatre in Port Hope, Ontario Place Forum expansion, the National Trade Centre in Exhibition Place, and the Metro Convention Centre in Toronto.

- Several other waterfront communities have been discussing concepts for major new visitor attractions, such as Halton's proposed Great Lakes Science Centre in Burlington, Mississauga's proposed Great Lakes Ecological Centre, and Clarington's proposals for a destination resort in the Port Darlington area.



Trenton Renaissance

The Trenton Waterfront Development Committee is planning the dynamic rebirth of the lands which border the Bay of Quinte and the Trent River. Coordinated by the Committee, working with community groups, businesses, and municipal and conservation authority staff, Trenton Renaissance is a broad initiative aimed at beautifying land along the water's edge and revitalizing the city.

A Waterfront Development Design was presented to the public in November 1994. To be implemented in stages, the design calls for the creation of linear parkland closely linked to Trenton's downtown. Stage one of Trenton Renaissance includes a program called Back of Front, which will put a fresh face on the back sides of Front Street commercial buildings. Walkways will reintroduce businesses to the waterfront and reconnect the entire community to its most precious resource. Improved access, architecture, and landscaping are going hand-in-hand to attract residents and visitors.

The focal point of Trenton's reborn waterfront is Fraser Park Marina, where $300,000 have been spent over the past several years to upgrade facilities and add docks. Boaters, hikers, and cyclists will be able to enjoy a variety of outdoor adventures in and around the city. The eastern end of the Waterfront Trail promises to become an even more popular destination in the near future when another $300,000 is spent, some of it on trail improvements.

For the supporters of Trenton Renaissance, Fraser Park is the beginning of a grander scheme. Besides the addition of much-needed amenities such as benches, patios, and washrooms, future plans call for multi-use pavilions, a nautically-themed play area, and a 65-feet floating pier. The formal designs for the downtown area will make way for more natural pathways as future stages of Trenton Renaissance move up the Trent River to connect with conservation lands and the Jack Lange Memorial Trail. Nature and culture will come together in one section of the River Walk where a heritage "apple tree promenade" is proposed.

Trenton Renaissance will eventually expand its focus beyond the waterfront to include other areas and other groups in the city's revitalization. By combining cultural heritage with natural beauty, the city hopes to become a truly unique waterfront town. The project already has proven that the regeneration of a city's waterfront can be a catalyst for both economic development and community involvement.

Steps to come:

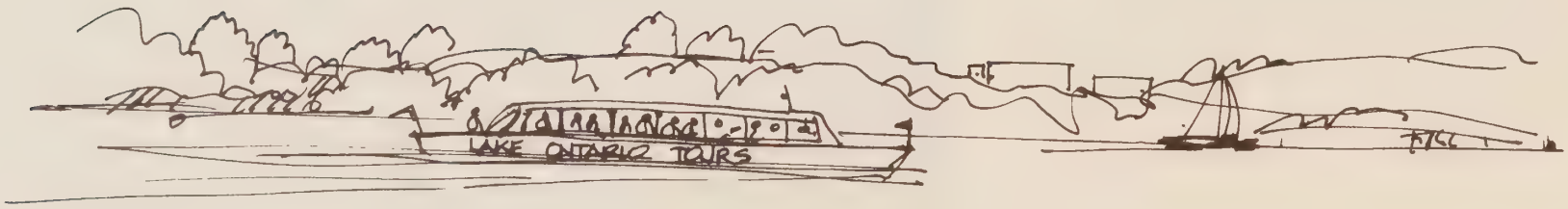
- The mass appeal of the central Toronto waterfront should be enhanced through implementation of the recommendations of the *Competitive Tourism Development Strategy for Metropolitan Toronto*, and the improvements to the Garrison Common area identified through *Regeneration* and subsequent studies.

- A number of additional cultural attractions on the central waterfront are being proposed or are in the early development stages. These include the Roundhouse Park with an operating rail heritage museum, a children's museum at Ontario Place, and a new home for the Provincial Archives.

- Phase 1 of the new Marine Museum on Spadina Quay in Harbourfront will reinforce the attraction of an already-active area.

- The introduction to the Greenway provided by the Waterfront Trail will provide opportunities for development of locally-based services such as food, accommodation, equipment rentals and repair, and related businesses.

- Development of additional "active" attractions, which could include a significant commercial component, will be encouraged within the primary tourism/recreation destination areas identified in Action 4.4. Opportunities may exist in Greenway communities for:



- excursion and sightseeing cruises
- camping
- historic animation (re-enactments, interpretive programs)
- arts and crafts shopping
- festival marketplaces
- restaurants
- country inns and bed-and-breakfast accommodations

Development of increased opportunities for "passive" recreation (such as walking, bird-watching, etc), including interpretive facilities, will be encouraged throughout the Greenway with location, scale, and design carefully selected to minimize conflicts with natural habitats or neighbourhoods.

Related implementation mechanisms in Chapter 4: V.1, C.1, C.3

ACTION 4.5 SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust.
A Tourism, Recreation and Economic Strategy for the Lake Ontario Greenway

Ontario. Ministry of Culture, Tourism and Recreation. Advisory Committee on a Tourism Strategy for the Province of Ontario, 1994.
Ontario's Tourism Industry - Opportunity, Progress, Innovation

Economic Planning Group of Canada, 1991.
Situational Analysis of the Overnight and Excursion Cruise Industry on the Great Lakes, St. Lawrence River and Interconnecting Waterways

Economic Planning Group of Canada, 1993.
Strategic Directions for the Planning, Development and Marketing of Ontario's Attractions, Festivals and Events

KPMG Management Consulting, 1992.
Competitive Tourism Development Strategy for Metropolitan Toronto

LORD Cultural Resources Planning and Management Inc. 1993.
Strategic Directions for Ontario's Cultural Tourism Product

Marshall Macklin Monaghan Limited, and Canada Market Research. 1992.
Strategic Directions for the 1990's, the Specialty Outdoors Sector in Ontario

The Randolph Group, 1994.
Assessment of Marina Infrastructure and the Boating Market: 1994 Update for Hamilton to Belleville Shoreline, Final Report

Don Bell, Waterfront Regeneration Trust

The Apple Route, Hastings County

Action 4.6:
Develop joint packaging and marketing of themed waterfront experiences

To maximize the economic benefits associated with tourism, it is important both to draw visitors to a community and to extend their activities and length of stay, preferably over at least one night. To achieve this, local attractions may need to be packaged together, in order to create a critical mass of tourism facilities and services to attract and hold visitors. These packages could include a variety of attractions and experiences within one community, to allow for a range of family interests, or they could provide a similar activity in different Greenway locations, such as a package of transient boating slips to encourage stays at different marinas along the shore. To be successful, the themes and experiences presented in the packages must respond to the demands of the market, as well as take advantage of the attractions in the area.

Examples of progress to date:

- The community-based tourism development initiative in the Port Hope-Cobourg area has included the development of added local attractions such as cycling routes, adoption of a name (Heritage Shores) to provide a sense of identity, and joint advertising as the start of a comprehensive marketing package. (See Actions 3.4 and 4.4)

- The Metro Toronto Convention and Visitors Association provides a mechanism to co-ordinate marketing and information about visitor attractions and facilities in Metro Toronto. These services are provided in other areas by regional tourism associations.

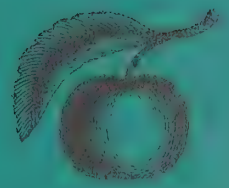
- The *Greenway Interpretation Master Plan* provides recommendations on themes that could be used by communities in packaging local facilities and resources in an attractive way.

- The development of the Apple Route in Northumberland County, which ties a scenic driving route with local places and events with an apple theme, provides a strong base for future associated facilities and marketing. The Waterfront Trail coincides in some sections with the Apple Route.

Steps to come:

The following theme areas have been identified as having particular potential within the Greenway, and development of additional packaged tourism products related to these themes will be encouraged:

- trail touring packages, oriented to cycling, hiking, or walking;
- themed touring packages, structured around transport by bus, train, or boat;
- two or three day Greenway Getaway packages at an attractive destination;
- learning holidays built around educational themes such as cultural heritage or agriculture;
- special interest packages related to historic homes and gardens, windsurfing, in-line skating, birdwatching or nature study.



The Apple Route

Delicious & Delightful

Whether you travel by car or bicycle, the waterfront trip along Highway 2, between Colborne and Trenton, is spectacular and fun for the whole family. In the spring of 1994, a group of locals eager to promote the charms of Northumberland and Hastings Counties launched the Apple Route along this stretch of road. Their aim is to draw attention to the orchards, rolling hills, and recreational attractions that define the eastern end of the North Shore.

The idea for the Apple Route began in 1992. Local tourism promoters, municipal officials, and the management of Colborne's Big Apple began the task of searching for ways to promote their region to travellers. Eventually the Ministries of Transportation, Agriculture, and Culture, Tourism and Recreation joined the discussions and the idea became a reality. A brochure and sign posts were produced with the support of local municipalities and provincial funding. These guides help visitors to discover the outdoor recreation areas, museums, antique stores, fruit and vegetable stands, and pick-your-own orchards along the Apple Route.

The communities that dot this beautiful stretch of waterfront recognize that there are still untapped economic benefits in the area. Signs and a brochure are just the beginning in the campaign to promote the Apple Route. A committee of tourism and agriculture representatives is preparing a marketing program designed to entice visitors to spend more than a day visiting the many attractions offered by these North Shore communities.

ACTION 4.6

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust:
A Tourism, Recreation and Economic Strategy for the Lake Ontario Greenway

LORD Cultural Resources Planning & Management Inc. 1995.
Lake Ontario Greenway Interpretation Master Plan

- As part of the Greenway Strategy launch, a number of activities will promote the Lake Ontario waterfront as a whole – guide books, thematic guides, media coverage of the Waterfront Trail opening, product releases with the waterfront logo, and so on.

- Communities with primary and/or secondary destination areas should create organizational partnerships at the local level to increase cooperation in staging and programming local events and festivals, create packages of related facilities and services (food, accommodation, equipment rentals, etc), and jointly market and promote these attractions.

Related implementation mechanisms in Chapter 4: C.1, C.3

Action 4.7:
Reduce conflicts between transportation corridors, waterfront access and sense of place

In a number of places along the Greenway, access to the waterfront is restricted by expressways or railway corridors. Even where physical access is possible, the noise and physical barrier associated with these transportation corridors can detract greatly from visitor experiences.

Examples of progress to date:

- Under its Central Transportation Improvement Program, the Trust in conjunction with the City, Metro Toronto, the Province and other agencies, has been examining methods to overcome the barrier effects of transportation corridors in the central Toronto waterfront area while maintaining the integrity of the transportation system. Initiatives underway include developing an inviting pedestrian corridor along York Street from Union Station to the waterfront, enhancing public transit access to the waterfront area, and exploring alternative design concepts to address the barrier effect of the elevated Gardiner Expressway as appropriate to the places through which it passes.
- The City of Trenton recently acquired a parcel of railway land separating the city from part of its waterfront, and hopes to acquire additional sections of rail corridor in future.
- The *Burlington Beach Master Plan Strategic Review* includes proposals to create building designs that would reduce conflicts with the elevated Skyway approaches, continued discussions on the removal of Hydro towers, redevelopment of a transportation works yard, and completion of waterfront trail/bikeway connections.

Steps to come:

- The communities of Clarington, Port Hope, Cobourg, and Hamilton Township should explore options to overcome the barrier effects of rail corridors in their communities, including the possibility of new trail links and new rail crossings.

Daphne Svenningson

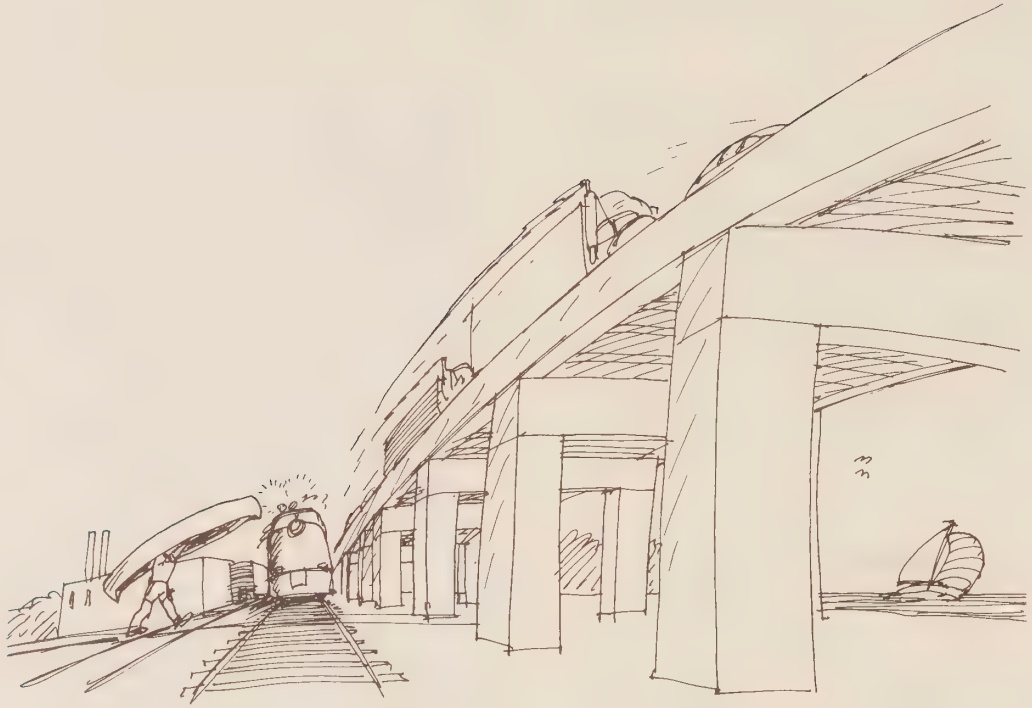
Rail line along the Port Hope waterfront

Action 4.7

Sources of Additional Information:

IBI Group et al. 1990.
Toronto Central Waterfront Transportation Corridor Study. Publication no. 15

IBI Group et al. 1993
Analysis of Redesigning/Relocating the Gardiner Expressway in the Garrison Common Area



- Development plans for the Port Union area in Scarborough should examine options to provide waterfront access under or across the existing rail corridor, taking public safety and liability issues fully into account.

- Changes to the transportation network in the Central Waterfront area of Toronto should include consideration of improved east-west public transit links between existing attractions (such as between Harbourfront and Ontario Place) as well as overcoming the north-south barrier of expressways and railways.

- Where abandoned rail corridors become available within the Greenway, their desirability for public acquisition as trail routes or for other public uses should be examined.

Related implementation mechanisms in Chapter 4: A.6, B.1, C.1

OBJECTIVE 5

Foster cooperation in cost-effective public and private initiatives by reducing jurisdictional gridlock, sharing resources, and coordinating waterfront activities.

There is a widespread sense that too many waterfront initiatives are plagued by red tape, by bureaucratic wrangling and unproductive approval processes, and by a considerable degree of confusion over priorities. While a number of provincial initiatives to streamline processes and provide specific policies and guidelines are helpful in the context of land use planning and development approvals, little attention has been given to the array of regulatory instruments governing shoreline projects. At the same time, the universal theme of achieving more with less has led to a greater willingness to share resources and enter into cooperative agreements to implement waterfront projects, an attitude that presents further opportunities for progress.

Action 5.1:

Integrate the application of provincial policies, regulations, and processes

Over 20 pieces of legislation currently apply to waterfront activities, including federal, provincial, municipal, and conservation authority regulatory powers. In most cases, these regulatory processes are administered separately, often in isolation, and often with less than satisfactory results. The need to provide improved integration and coordination of these overlapping processes has been strongly expressed by waterfront owners, municipalities, and agencies.

Examples of progress to date:

- A major public review of planning practices by the Commission on Planning and Development Reform in Ontario has led to passage of a revised Planning Act (Bill 163), and to the release of a *Comprehensive Set of Policy Statements* and implementation guidelines, which will provide considerably more clarity and certainty about provincial expectations. As these policies, and the associated process reforms, are implemented at the municipal level, significant improvements in integration of policies can be expected.

Co-operate

To achieve this objective, a number of actions are planned or underway:

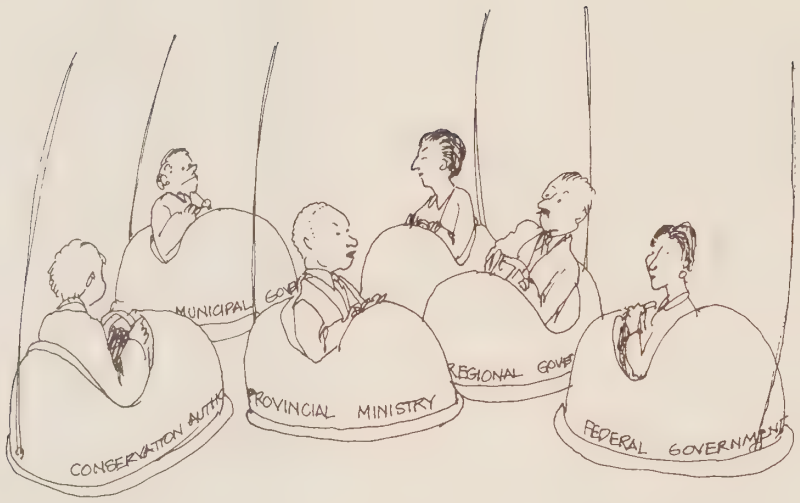
5.1 Integrate the application of provincial policies, regulations, and processes.

5.2 Coordinate the allocation and timing of funding to waterfront projects.

5.3 Assist in resolving jurisdictional or policy conflicts.

5.4 Standardize and link research and information networks.

5.5 Evaluate the cumulative effects of waterfront changes.



- A memorandum of understanding has been established among the Ministry of Natural Resources, the Halton Region Conservation Authority, and the Credit Valley Conservation Authority to clarify responsibility for administering the permit requirements of the Lakes and Rivers Improvement Act. Recent Ontario legislation provides a mechanism to allow full delegation of this function, and negotiations are underway with other conservation authorities.

- A guide for waterfront landowners and proponents to summarize the approvals needed for various types of common shoreline activities is included in the toolkit.

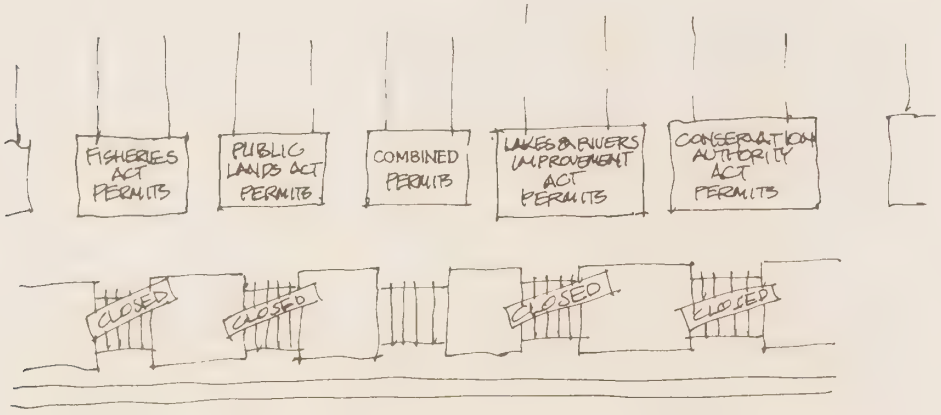
Steps to come:

- Within each shoreline management unit identified in this Strategy, the process of developing Integrated Shoreline Management Plans (ISMPs) should be used to bring together agencies with relevant legislation and policy along the shoreline. ISMPs should be completed in advance of consideration of major shoreline changes such as new harbours, lakefills, or extensive shore protection. This will provide an opportunity to develop a framework for a more streamlined review of future waterfront projects. ISMPs should include the involvement of provincial ministries with responsibilities in water quality and fish and wildlife, conservation authorities with their hazard management responsibilities, local and regional municipalities with land use and recreation responsibilities, as well as local residents and shoreline landowners. (See also Action 1.1)

The Waterfront Regeneration Trust will work with the Ministry of Natural Resources, the Ministry of Environment and Energy, and conservation authorities to seek ways to reduce duplication and lack of coordination in the administration of various regulatory requirements along the shoreline. This should lead to a "one-window" approach, common application forms, and round-table agency review processes wherever possible for permits and mitigating measures for shoreline works under the:

- Lakes and Rivers Improvement Act
- Fisheries Act
- Conservation Authorities Act
- Public Lands Act
- Navigable Waters Protection Act
- Beds of Navigable Waters Act
- Environmental Protection Act
- Ontario Water Resources Act

Related implementation mechanisms in Chapter 4: A.1, A.2, A.6



"One-window" approval process

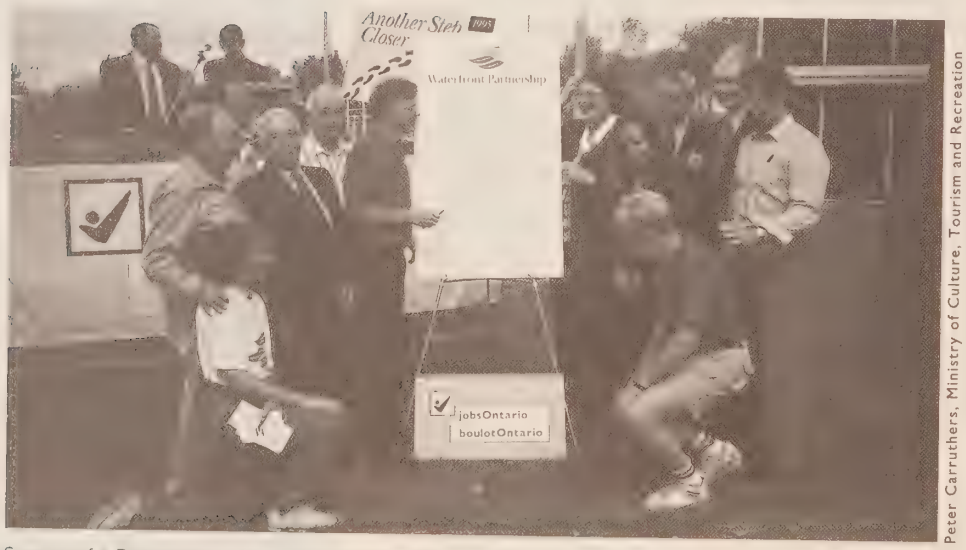
Action 5.1 Sources of Additional Information:

Waterfront Regeneration Trust:
Demonstration Terms of Reference for an Integrated Shoreline Management Plan
Guide to Shoreline Approvals for Landowners

Ontario. Ministry of Municipal Affairs. 1994.
Comprehensive Set of Policy Statements

Action 5.2:
Coordinate the allocation and timing of funding to waterfront projects

Even though there are likely to be fewer public dollars available in future, a substantial amount of federal, provincial, and municipal funding is allocated to waterfront projects of various kinds, including planning studies, recreational facilities and services, and utilities and infrastructure. By creating partnerships to coordinate the allocation and timing of a wide range of funding sources, more effective results can be achieved on priority projects within the Greenway.



Peter Carruthers, Ministry of Culture, Tourism and Recreation

Signing of a Partnership Agreement for the Oshawa Waterfront Trail

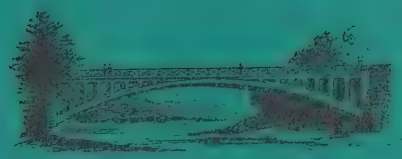
Examples of progress to date:

- Over the past three years, the Trust has co-ordinated applications to the provincial Treasury Board for Waterfront Trail projects, resulting in the implementation of 54 capital projects in 20 municipalities across the waterfront under jobsOntario*Capital* and the Canada-Ontario Infrastructure Works program. This allocation of Provincial funds to the Waterfront Trail has triggered matching funding of more than double the Provincial investment from municipalities, the federal government, community groups, and businesses.

- Under its Provincial Bicycle Policy, the Ontario Ministry of Transportation has contributed significantly to the completion of the Waterfront Trail by providing paved shoulders on sections of Highways 2 and 33, and by partially funding the construction of the pedestrian-cycling bridge across the mouth of the Humber River as part of a larger bridge replacement project.

Steps to come:

- Further capital funding will be required to complete or upgrade a few sections of the Waterfront Trail, and to support a range of regeneration, interpretation and recreation projects. To the extent that government funds are available, the Waterfront Regeneration Trust will continue its role of coordinating, prioritizing, and assisting in the review process for capital funding programs.



Bridging the Past and Present

Where the Waterfront Trail meets the Humber River there is a bridge that is a remarkable achievement and an impressive structure. It is much more than a 6.5 metre-wide path between the cities of Etobicoke and Toronto. By generating awareness of the Humber's heritage, the bridge is a link with history. As an example of cooperation between jurisdictions and disciplines it reflects hope for the future.

In 1990, Metro Toronto decided to rebuild the road bridges near the mouth of the Humber. By doing so it created an opportunity to make a safe and pleasant connection between the trails and green spaces that extend up the Humber and along the Etobicoke and Toronto waterfronts. A coalition of public agencies and private groups came together and shared their visions of a bicycle-pedestrian gateway between the cities and between the lake and the river. Funding for the $4 million project came from Metro, the Province, and the two cities. Just as important to the planning and design process was the advice and input of many interested people and organizations. Involved were several municipal departments, the Metro Toronto and Region Conservation Authority, and various citizen groups, including Citizens for a Lakeshore Greenway, Swansea Ratepayers Association, and the residents associations of Palace Pier and Palace Place.

As the southern terminus of the Toronto Carrying Place – a fur trade route that connected Lake Ontario to Georgian Bay – the mouth of the Humber was once the commercial centre of the North Shore. Because of the river's geographic, cultural, and natural significance, a competition was held to determine who would design and engineer the 139 metres-long bicycle-pedestrian bridge. For the first time, Metro engaged architects, landscape architects, and artists to work on an equal basis with bridge engineers. The goal was to depict the area's rich heritage by using aboriginal motifs and native plants in the design of the bridge and adjacent parks.

The new gateway across the Humber River, including all the road bridges, will not be completed until 2002. But in Spring 1995 the bicycle-pedestrian bridge will open, and the Waterfront Trail will cross an historic intersection. For aboriginals and European settlers the mouth of the Humber was a place to meet and find refuge. For bureaucrats and designers it was also a chance to meet and share a vision. Those who approach or cross the bridge today may have a chance to pause and reflect on the past and imagine the negotiations that took place hundreds of years ago between fur traders. They may also spare a moment to consider the negotiations and cooperation required today to create such an exciting new waterfront experience. Teamwork, cooperation, creativity, and skill have combined to produce a bridge that is an artistic, architectural, and engineering achievement.

Advanced Imaging

Humber River Bicycle-Pedestrian Bridge

- Future allocations of government funds to Greenway projects should continue to require some form of local matching, with the ratio of matching required linked to the size of the community, its fiscal capacity, and the priority of the project. Contributions by businesses and community groups, including donated services, materials, and volunteer labour, should be encouraged as part of local matching.

- The Waterfront Regeneration Trust is exploring ways to broaden the base of support for the Lake Ontario Greenway, in particular with the private sector. An example of such an initiative is a sponsorship program that would provide benefits to the sponsors relating to the publishing program, recognition opportunities, association with waterfront programming and use of the waterfront logo.

- The Waterfront Regeneration Trust is investigating the establishment of an endowment fund to be dedicated to the regeneration of the waterfront. Such a fund would provide opportunities for individuals, service groups, community organizations, corporations, and governments to participate in a variety of capital projects in the Lake Ontario Greenway.

- Funding for shoreline hazard management plans and waterfront access plans should be directed towards the development of Integrated Shoreline Management Plans, and should be augmented to provide for inclusion of terrestrial and aquatic habitat components.

- Some form of financial incentive, perhaps in the form of planning grants, should be made available to encourage waterfront landowners to work together to create grouped shoreline treatment projects for the renewal of protective works on small properties. Such an approach provides opportunities to incorporate habitat enhancement or public access measures, as well as increasing the long-term cost-effectiveness of shoreline protection.

Related implementation mechanisms in Chapter 4: A.6, C.1, C.2, C.3

Action 5.3

Assist in resolving jurisdictional or policy conflicts

In the waterfront area with its multiple agencies involved, conflicts over jurisdiction or policy are not infrequent. Since the agencies involved are often hampered by a relatively narrow mandate or lack of resources, a mechanism to bring parties together to resolve disputes is often useful.

Examples of progress to date:

- The Waterfront Regeneration Trust has often been asked by the Province or by municipalities and other agencies to act as a facilitator or mediator on difficult, multi-jurisdictional issues along the waterfront. Over the past three years, this has included such areas as:

  - public consultation and recommendations to the Province regarding a proposed roadway within the Red Hill Creek valley in Hamilton, in the context of broader issues of regional environment and economy;

  - development of a management structure and funding framework for the new Rouge Park;

  - public discussion sessions and exploration of options regarding the protection of a provincially significant wetland contained within an area licensed for extraction by St. Marys Cement in Clarington;

ACTION 5.3

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust. 1994.
Report to Premier Rae Vision 2020: The Provincial Response

Waterfront Regeneration Trust. 1995.
Rouge Park Management Structure and Funding Report

Symmes, R. 1995.
Westside Creek Marsh - Proposal: Fact Sheet

- Eight conservation authorities with watersheds draining into Lake Ontario have formed the Lake Ontario Conservation Authority Alliance, with a common goal of promoting and implementing the ecosystem approach for the regeneration of Lake Ontario and its shoreline. This Alliance will help to coordinate activities and policies along the shore, identify priorities and program opportunities, and provide a forum to act with one voice on lake wide issues and common concerns.

- The Province has established the Office of the Provincial Facilitator to assist in clearing the backlog of issues related to municipal Official Plan approvals, and to act as a mediator on land use issues where necessary.

Steps to come:

- Working with the Lake Ontario Greenway Strategy Steering Committee, the Trust will continue to play a role as mediator/facilitator to advance the implementation of Greenway objectives where requested by the Province or other parties involved.

Dr. J.D. Murray

Beach and bluffs, west of Port Darlington

- Municipalities and provincial agencies should be encouraged to develop experience and skills in the round-table approach to resolving complex issues, as an alternative where possible to an adversarial hearings process.

Related implementation mechanisms in Chapter 4: A.4, A.6

Action 5.4:
Standardize and link research and information networks

In the process of developing the Greenway Strategy, a number of areas were discovered where the information base is inconsistent or incomplete. As well, topics where further research would be helpful in managing the shoreline were identified.

Examples of progress to date:

- A considerable range and amount of new information and analysis on Greenway landscapes, resources, and communities has been included in the toolkit and in background reports.

- As part of the Greenway Strategy development, a large amount of relevant information has been digitized in Geographic Information System (GIS) format.

- Metro Toronto has recently completed a *State of the Environment Report* which documents environmental conditions, human pressures that affect the environment, and the actions in place to address these issues.

- A system developed by the National Water Research Institute called RAISON is being used to integrate environmental information for analysis and visualization of data, and to support decision making through the expert system knowledge base integrated with models, statistics and artificial intelligence networks.

Steps to come:

- The Lake Ontario Conservation Authorities Alliance has proposed the development of a common data set on shoreline hazards, coastal processes, environmental features, and recreation and access areas as a pilot project to assist future shoreline management. A list of proposed data layers is included in the toolkit.

- To increase cost-effectiveness of monitoring, joint programs which monitor several factors (e.g. coastal processes and fish habitat) at the same time should be encouraged.

- Information on waterfront flora and fauna and natural communities will be made available to the Natural Heritage Information System operated by the Ministry of Natural Resources to assist in future monitoring and data management programs.

ACTION 5.4

SOURCES OF ADDITIONAL INFORMATION:

Waterfront Regeneration Trust:
Shoreline Management - Proposed Components of a Standardized Database

Ontario. Ministry of Culture,Tourism and Recreation, and Ontario. Ministry of Municipal Affairs. Waterfront Regeneration Trust. 1995.
***Cultural Heritage Conservation: Manual* (Draft)**

Metropolitan Toronto (Ont. : Regional municipality). Planning Dept. 1995.
State of the Environment Report: Metropolitan Toronto

- Priority should be given by the Trust and other agencies to information management projects which will develop uniform data standards and coordinate data collection related to the following topics:

  - monitoring of economic activity related to tourism programs and the Waterfront Trail, especially factors that improve the understanding of symbiotic economic relationships between the Greenway and adjacent communities;

  - an analysis of bioregional habitat supply, including improved basic information on the extent, quality, and composition of forest cover;

  - field-derived data on the nature and extent of species movement associated with habitat corridors, and on the practicality and effectiveness of habitat restoration techniques;

  - field collection of additional data on significant habitats, both terrestrial and aquatic, with particular emphasis on the role of the shoreline in sustaining coldwater fish populations in the eastern sections of the Greenway;

  - a standardized implementation approach to collection of information, evaluation, and interpretation of historic sites, structures and landscapes;

  - patterns of use on the Waterfront Trail, user expectations, and management needs.

Metro Toronto and Region Conservation Authority

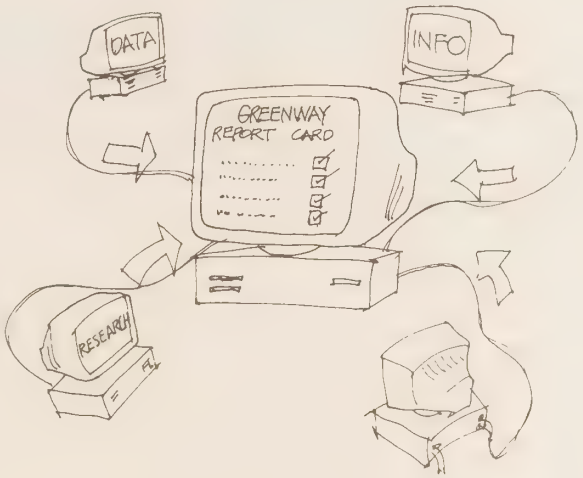
Sport fishing in Lake Ontario

- Future monitoring programs along the waterfront should draw upon:
  - working groups of agency staff, consultants and academics to advise on uniform data collection standards;
  - knowledge of monitoring programs already in place by other agencies (e.g. for water quality, trail counts) which could provide useful information;
  - the potential involvement of the volunteer community in such monitoring programs as breeding bird surveys;
  - tracking of the general field of state-of-the-environment reporting to keep abreast of current developments.
- New information technologies such as Internet should be used to assist in exchange of data and information on monitoring methods, and to make monitoring results available to schools, libraries, and other interested agencies.

Related implementation mechanisms in Chapter 4: A.4, A.6

Jeffery Stinson

Canada Malting Complex



Action 5.5:
Evaluate the cumulative effects of waterfront changes

One of the major concerns in stewardship of a large resource like the Lake Ontario waterfront is the lack of understanding of the cumulative effects of a wide range of activities on the waterfront, in the Great Lakes system, and in the tributary watersheds. Simply put, cumulative effects are the combined results of all the human activities in an area over time, as well as the incremental effects of new projects. They may be considered beneficial to the ecosystem (such as the combined effects of a series of habitat restoration projects) or harmful (such as the combined effects of uncoordinated shoreline treatments and their interactions with storm sewer outfalls).

Assessing the probable cumulative effects of proposed projects on the waterfront cannot be accomplished by considering individual projects in isolation. Rather, this assessment requires an integrated approach that takes into account all the existing and proposed activities and interactions in the surrounding area.

Examples of progress to date:

- The information base collected in background and toolkit reports for the Greenway Strategy provides an overview of the current state of the ecosystem along the waterfront.

- A considerable amount of regular environmental monitoring, particularly related to water quality issues, is carried out along the waterfront by federal, provincial, and municipal agencies, providing an information base for prediction of cumulative effects.

- Volunteer-based wildlife monitoring programs, such as the forest bird and marsh bird monitoring programs and the Declining Amphibians Task Force, provide some information on the cumulative effects of habitat changes; a waterfront survey of amphibian populations sponsored by the Trust in 1994 provides another benchmark.

- Some indices and indicator species have been proposed to assist in the evaluation of cumulative effects, such as lake trout for the coldwater portions of the lake, raptors such as bald eagles or osprey along the shoreline, and a Great Lakes Index of Biotic Integrity as a measure of the health of littoral and warmwater habitats.

Steps to come:

- Continued monitoring will be necessary, using uniform data standards as proposed in Action 5.4, to ensure that emerging cumulative effects are detected and that appropriate and timely actions can be taken to mitigate any harmful effects.

- Subwatershed planning should be undertaken (see Action 1.4), particularly where land uses and other activities are in transition, to provide a framework for evaluating watershed changes.

- Integrated Shoreline Management Plans should incorporate an assessment of probable cumulative effects to assist in determining appropriate policies for individual projects.

- A Greenway Report Card should be prepared at a minimum once every three years, using a broad set of barometers of progress. The barometers selected for periodic assessment should:

  - relate to the long-term vision for the Greenway, so that progress towards this target can be measured in comparison to current conditions;

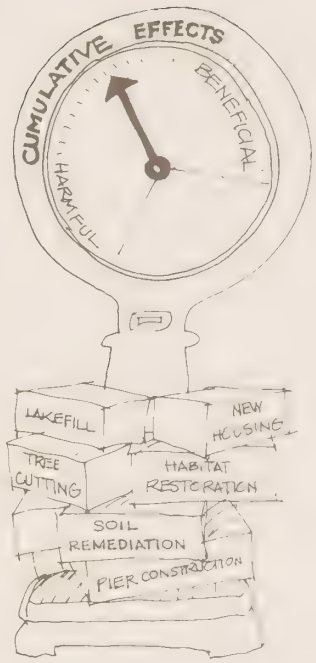
  - use ecological indicators (such as fish, amphibians) as well as social and economic indicators to provide a broad picture of ecosystem health;

  - provide meaningful information to the public on progress or problems, and encourage volunteer participation in data gathering;

  - build on existing monitoring efforts to minimize cost and duplication.

An initial set of barometers, for which baseline data currently exists, is included in Table 1. These barometers will be refined and supplemented by additional measures through discussion with agencies and municipalities.

Related implementation mechanisms in Chapter 4: A.4, A.6



ACTION 5.5

SOURCES OF ADDITIONAL INFORMATION

Schneider, Fred. 1995.
Herpetile Survey for the Lake Ontario Greenway.
(working title)

Ontario. Ministry of Environment and Energy, and Ontario. Ministry of Natural Resources. 1993.
Subwatershed Planning.

Canada. Environment Canada. 1995.
Wildlife Watchers' Report on Monitoring.

TABLE 1. INITIAL SET OF BAROMETERS OF PROGRESS

Water Quality	• Levels of persistent toxic substances in Lake Ontario • Beach postings • Phosphorus trends
Habitat Status	• Status of natural core areas (designated in OPs, in public ownership, classified as significant, etc.) • Habitat restoration projects
Wildlife Populations	• Contaminant levels in biota (eg. herring gull eggs, caspian terns, snapping turtles) • Reproductive success in double crested cormorants • Change in population levels and/or distribution of selected Vulnerable, Threatened, or Endangered (VTE) species • Change in community structure and/or distribution of amphibian populations • Size of resident Giant Canada Goose population
Planning and Data Collection	• Implementation status of Remedial Action Plans • Number of Integrated Shoreline Management Plans • Number of comprehensive watershed and subwatershed plans • Number of Archaeological and/or Cultural Master Plans • Number of Historic Land Use Inventories • Number of standardized data management projects
Waterfront Trail	• Kilometres of Waterfront Trail completed • Percent of Waterfront Trail off-road
Tourism Initiatives	• New waterfront attractions • Number of cooperative marketing initiatives in Greenway communities
Cultural Heritage	• Number of registered archaeological sites and designated historic buildings
Greenway Participation	• Number of waterfront visitors at selected locations and events • Number and type of new interpretive facilities • Number of Guide and Scout badges earned

Chapter four

Implementation

Landplan Collaborative

LaSalle Park Marina, Burlington, and Hamilton Harbour

PLANNING/REGULATORY

A wide range of existing legislation provides a planning and regulatory context for activities along the waterfront, and can be used to assist in implementing the Greenway Strategy. These can be grouped in six categories:

A.1 Municipal planning and environmental assessment

A.2 Legislation affecting use of water's edge and offshore

A.3 Other regulatory instruments

A.4 Watershed strategies and subwatershed plans

A.5 Remedial Action Plans

A.6 Integrated Shoreline Management Plans

Implementation mechanisms to carry out Greenway objectives can be grouped into three related categories

A: Planning/Regulatory

B: Stewardship

C: Funding and Incentives

Within each of these categories, most mechanisms already exist, some are emerging, and a few others have been identified as being needed.

A. PLANNING/REGULATORY

A.1: Municipal planning and environmental assessment

Municipal planning:

In a regulatory sense, the Planning Act is the single most important piece of legislation. This Act establishes procedures for articulating and implementing provincial policies, for establishing Official Plans at the regional and local municipal level, and for local regulatory mechanisms such as zoning, Secondary Plans, site plan approval powers, etc.

All five upper tier municipalities, and 13 of the 22 local municipalities along the waterfront, have prepared or amended their Official Plans since *Regeneration* was published in June 1992. This has given them an opportunity to incorporate the ecosystem approach and policies reflecting the nine waterfront principles put forward by the Royal Commission on the Future of the Toronto Waterfront. In addition, a number of municipalities (Metro Toronto, Durham Region, Burlington, Mississauga, Etobicoke, Ajax, Oshawa, Clarington, Port Hope, Cobourg) have completed or are in the process of undertaking specific waterfront studies.

Where necessary, specific policies related to Greenway Strategy actions can be added as Official Plans are updated or by amendment.

Environmental assessment:

Both federal and provincial environmental assessment legislation provide approval and appeal processes for major projects, with consideration of environmental effects (broadly defined to include ecological, economic, cultural and social factors) and alternatives.

The provincial Environmental Assessment Act, administered by the Ontario Ministry of Environment and Energy (MOEE), applies to public sector projects such as infrastructure, electrical generating and transmission facilities, etc. Approval processes under this Act can be combined with Planning Act approvals through consolidated hearings. Smaller-scale projects are often included within Class Environmental Assessments. Class EAs of particular interest along the waterfront include the Class EA for Municipal Water and Wastewater Projects, and the Class EA for Remedial Flood and Erosion Control Projects of the Conservation Authorities.

The environmental assessment process is especially useful in considering projects with complex or off-site effects. Along the waterfront, these may include projects with water quality implications (e.g. sewage treatment plant expansions), projects with potential to alter shoreline processes or aquatic linkages (e.g. lakefills, breakwaters), and projects which could lead to significant loss or fragmentation of natural habitats (e.g. marinas, new roads, utility corridors).

The Canadian Environmental Assessment Act, which was recently proclaimed as federal legislation under the Department of Environment, applies environmental assessment procedures to projects with federal funding such as harbour development, projects on federal lands or proposed by federal agencies, or projects where federal legislation applies.

Planning Act Reform

Significant amendments to the Planning Act through Bill 163, requiring among other things that municipal Official Plans and planning decisions be "consistent with" an integrated set of provincial policies, took effect in March 1995. The Lake Ontario Greenway Strategy implementation relies on these comprehensive policies (which incorporate earlier individual policy statements) and their implementation guidelines, particularly on their requirements for:

- **protection of significant natural heritage features and areas, including stream corridors, habitats of endangered and threatened species, wetlands, woodlands, wildlife habitat, natural corridors, areas of natural and scientific interest, fish habitat, and shorelines of lakes, rivers and streams;**
- **directing development outside the regulatory shoreline to avoid danger to public safety or public health or property damage, and defining acceptable approaches to development within flood or erosion prone areas;**
- **encouraging planning to give priority to energy-efficient, low-polluting travel such as walking, bicycling, and public transit;**
- **managing growth and change to foster communities that are socially, economically, and culturally healthy, and that make efficient use of land, infrastructure, and public services and facilities;**
- **encouraging provision of reasonable access to public land and water bodies;**
- **encouraging conservation of significant landscapes, vistas, and ridge-lines, and of significant cultural heritage landscapes and built heritage resources;**
- **requiring prior documentation of archaeological resources before development, and preservation of significant archaeological sites;**
- **protecting significant linear corridors (such as abandoned rail lines);**
- **protecting prime agricultural areas for long-term agricultural use;**
- **requiring Environmental Impact Studies which will assist in avoiding negative effects and in generating data for monitoring cumulative effects.**

Dr. J.D. Murray

Port of Toronto

A.2: Legislation affecting use of water's edge and offshore

Navigable Waters Protection Act:

This federal legislation, administered by the Department of Transport, requires permits for any works within navigable waters, including Lake Ontario and major tributaries.

Fisheries Act:

This federal legislation, with administration shared between the Department of Fisheries and Oceans and the Ontario Ministry of Natural Resources (MNR), regulates fish habitat protection and pollution prevention. Major elements of the habitat protection provisions have been incorporated into the provincial *Comprehensive Set of Policy Statements*. The Act requires no net loss of fish habitat; mitigation measures and/or compensation to replace habitat may be frequently considered.

Beds of Navigable Waters Act:

Administered by MNR, this Act defines and protects navigable waters for public use; and establishes a process to regulate use of beds of navigable waters for such works as dams, wharfs, docks, tunnels, pipes, or placing of fill.

Public Lands Act:

This legislation, which is administered by MNR, applies where waterlots or shoreline are in Provincial ownership. It requires permits for placing of buildings or structures on public lands (including beds of navigable waters). The Act also requires permits for dredging or filling of shore lands (public or private), including lands seasonally inundated, and assigns ownership of lands with shipwrecks.

Conservation Authorities Act:

Under this Act, which is administered by MNR, conservation authorities (CAs) can enact regulations controlling the alteration of waterways and the placement of fill or construction in areas subject to flooding or erosion. These regulations can include Great Lakes shoreline as well as tributary streams; regulations are in place on only parts of the Greenway shoreline. CAs have primary responsibility for administering the *Great Lakes – St. Lawrence River Shoreline Policy*.

Lakes and Rivers Improvement Act:

Permits are required for direct alteration of a watercourse under this legislation, which is administered by MNR, to ensure the suitability of the location and nature of "improvements", which include protection works along the shoreline and projects in the water. The Act has broad objectives related to "the use, management and perpetuation of the fish, wildlife and other natural resources dependent on these waters, and the preservation of natural amenities", and could probably be applied more broadly than it has been.

Municipal Act:

This Act, administered by the Ministry of Municipal Affairs (MMA), establishes the framework for municipal operations. It provides the ability for a municipality to pass a by-law requiring approval for construction over any public shore, bay, harbour, river or water; establishes building permit requirements for retaining walls; and allows the passage of by-laws to regulate tree-cutting or site clean-up agreements.

Environmental Protection Act:

This legislation, administered by MOEE, provides the authority for MOEE to require that a property owner take action to prevent an adverse effect from the presence or discharge of a contaminant. It also allows MOEE to order that a contaminated property be restored in a manner consistent with existing guidelines, standards and procedures. This legislation requires Certificates of Approval for sources of air emissions and other discharges to the environment that could cause an adverse effect and describes liability for spills. It also requires approvals for construction of lakefill projects, as described in the *Guide to Shoreline Approvals for Landowners*.

Ontario Water Resources Act:

This Act, administered by MOEE, regulates water supply and quality and requires notification and/or permits for open water disposal of dredged materials, hydraulic dredging, major marine construction, and marine activities in designated water supply areas (i.e. near water intake pipes).

Daphne Svenningson

Trumpeter swan

Dr. J.D. Murray

Fishing in the fog

A.3: Other regulatory instruments

Harbour Commissions Act:

This federal legislation regulates the activities of the Oshawa Harbour Commission.

Toronto Harbour Commissioners Act:

This federal legislation established and regulates the Toronto Harbour Commission.

Hamilton Harbour Commission Act:

This federal legislation established and regulates the Hamilton Harbour Commission.

Fishing and Recreational Harbours Act:

This federal legislation, administered by the Department of Fisheries and Oceans, regulates the use, management, and maintenance of "scheduled harbours", which include part or all of the harbours at the following locations:

- Bronte Harbour
- Oakville Harbour
- Port Credit
- Bluffers Park
- Whitby Harbour
- Port Darlington
- Port of Newcastle
- Port Hope
- Cobourg
- Presqu'ile Point
- Brighton
- Trenton

Health Protection and Promotion Act:

This is provincial legislation, administered by the Ministry of Health, which empowers a Medical Officers of Health to use regulations in cases of health hazards, such as requiring the posting of beaches during periods of high bacterial levels.

Aggregate Resources Act:

This Act, administered by MNR, regulates the approval and management of pit and quarry operations such as those on the waterfront owned by St. Marys Cement and St. Lawrence Cement. The Act has discretionary powers to require environmental impact studies and mitigation prior to issuing of licences.

Endangered Species Act:

This Act, administered by MNR, requires protection of endangered species and their habitat; it currently applies to only one known species and location along the waterfront (hoary mountain mint in Burlington).

Ontario Heritage Act:

This legislation, administered by the Ministry of Culture, Tourism and Recreation (MCTR), enables municipalities to establish Local Architectural Conservation Advisory Committees, to designate properties of historic or architectural interest, to enter agreements to protect designated properties, and to create heritage districts and establish guidelines to protect their character. The Minister of Culture, Tourism and Recreation can designate archaeological sites for protection and can establish other policies and programs for the conservation of heritage. Significant revisions to strengthen this Act have been proposed, so that municipalities can more effectively protect their cultural heritage.

Provincial Parks Act:

This legislation, administered by MNR, regulates management of provincial parks within the Greenway at Darlington and Presqu'ile.

Trees Act:

This provincial legislation, administered by MNR, allows Regions and Counties to adopt tree-cutting by-laws.

Presqu'ile Provincial Park

Cori Arthur, Northumberland Tourism Bureau

A.4: Watershed strategies and subwatershed plans

Over the past several years, watershed strategies of varying kinds have been prepared for several tributary rivers including the Credit, Don, and Lynde Creek, and more strategies are under development. In most cases, strategy development is led by the local conservation authority, in partnership with municipalities and local interest groups. The impetus to prepare watershed strategies is often related to development applications or other proposed activities with the potential to affect the health of the watershed.

Watershed strategies are intended to outline how characteristics of the watershed (including water, land, and habitat) can be protected and enhanced as land uses change. They also set the stage for the preparation of subwatershed plans, which include further details on water resource management strategies. Subwatershed plans address issues such as stormwater management, and have most frequently been used in association with rapidly developing areas. Much of the implementation of practices developed through these plans is through the municipal planning approval process.

Both of these mechanisms have the potential to maintain water flow regimes and significantly improve water quality and habitat connections in waterfront tributaries, and they should be regarded as important planning tools in all watersheds feeding into the Greenway. Improvements to streamline the process of developing and implementing these strategies and plans would help to encourage their use.

A.5: Remedial Action Plans

As outlined in Chapter Two, Remedial Action Plans are the primary planning tool for defining measures necessary to reverse water and habitat quality problems in the four Areas of Concern along the waterfront. The development of Remedial Action Plans involves a substantial amount of data collection and analysis leading to a problem definition, and opportunities for public involvement in assessing solutions. The implementation of Remedial Action Plans will remain the primary vehicle for environmental rehabilitation in these areas. (See also Action 1.1).

A.6: Integrated Shoreline Management Plans

Because of the physical and land use differences along the Lake Ontario waterfront, it is impossible to prescribe one set of shoreline management recommendations that will apply everywhere. A more practical approach is the development of a set of Integrated Shoreline Management Plans (ISMPs), based on the concepts outlined in this Greenway Strategy. (See also Action 1.1.)

The foundation for ISMPs is the more traditional shoreline hazard management activities undertaken by conservation authorities, but ISMPs will be more comprehensive in their scope, integrating water quality, habitat, and recreational access concerns, and involving the full range of agencies, municipalities, and landowners with shoreline interests. The boundaries of each ISMP should be based on the shoreline units shown on Map 3, or on major sections of shoreline units defined by differences in shoreline character or littoral drift patterns.

B. STEWARDSHIP

B.1: Management of public lands

Existing public lands include municipal, conservation authority, and provincial parks, and waterfront lands held by utilities such as Ontario Hydro, the Ontario Clean Water Agency, and municipal utilities. While these lands contribute significantly to Greenway objectives in their current use (such as sewage treatment plants curtailing water pollution, for example), in many cases they are managed solely for a single use. With planning involving the owners and stakeholders to ensure compatibility with present and future uses, they could contribute to a broader range of Greenway objectives. For example, buffer lands around generating stations and transmission corridors could in some cases be managed to increase wildlife habitats; provincial or municipal parks could contribute to regional tourism development strategies; water treatment plants could provide for public access, and so on.

Another aspect of public land management is the treatment of the lake bed, most of which is publicly owned. Through a Memorandum of Understanding between MNR (the agency that administers provincial water lots) and the Trust, these lands will be retained in public ownership, except where significant public benefits can be demonstrated from their disposition (see *Management and Disposition of Lake Ontario Crown Shorelands within the Greater Toronto Bioregion* in the toolkit).

STEWARDSHIP

Stewardship is based on the concept of voluntary management of both public and private lands in such a way that they contribute to a broad range of ecological and cultural objectives. The range of stewardship opportunities includes:

Charity Landon Waterfront Regeneration Trust

Burloak Park shoreline and bluff, Oakville

B.2: Land acquisition by public agencies

Land acquisition by public agencies usually takes place through purchase, donation, or dedication during development, using the parkland dedication provisions of the Planning Act. In recent years, most of the acquisition has occurred at the municipal level. Conservation authorities have also played a major role, although their enthusiasm for land acquisition has been considerably dampened by the loss of provincial property tax rebates for ecologically significant lands. Public purchase has also been an important method of protecting culturally significant properties, either for future museum use or to be sympathetically altered for some other public purpose. In many cases, waterfront lands are also acquired by public agencies for other purposes such as municipal utilities or infrastructure.

Public acquisition of key waterfront lands will remain an important implementation mechanism, particularly for the eastern portion of the Greenway where acquisition of important natural assets could take place at reasonable cost, and in the more urban parts of the Greenway where waterfront open space opportunities are scarce. In some cases, acquisition of access agreements or leases to provide for a trail link or other public access across private lands could be useful mechanisms.

At present, land acquisition programs along the waterfront are very much opportunity-driven. A more coordinated strategy to acquire key properties in advance of development pressures, in concert with other planning and stewardship tools, would be beneficial in the eastern half of the Greenway. The involvement of conservation authorities, municipalities, and community groups will be important to a successful strategy. Every effort should be made to tap into larger-scale acquisition programs such as The Nature Conservancy of Canada's Conservation of Great Lakes Biodiversity initiative, the Eastern Habitat Joint Venture, and the Great Lakes Cleanup Fund.

B.3: Landowner contact

Landowner contact leading to private land stewardship is a relatively new approach along the waterfront, but one that has been used successfully in other parts of Ontario for several years, primarily for natural areas in rural settings such as wetlands and Niagara Escarpment lands. This technique enrolls landowners in voluntary programs and management agreements to protect significant natural features. Currently, programs are underway in the Northumberland County waterfront area and in association with the Hamilton Harbour RAP program. Metro Toronto identified a need to establish a similar program for urban natural areas near the waterfront in its 1994 *Metropolitan Waterfront Plan.*

Landowner contact and stewardship is an appropriate tool for natural core areas, corridors, and possibly cultural and scenic landscapes wherever land uses are relatively stable; it is likely to be less successful where land speculation in advance of development is underway. Stewardship is primarily oriented towards the protection or restoration of the natural qualities of a property, and is less appropriate for arranging public access because of landowner concerns about liability and littering. In urban areas, formal stewardship programs involving private lands are an experimental concept, but there would appear to be much promise for working with owners of natural ravines or other habitats, as well as historic buildings and cultural landscapes.

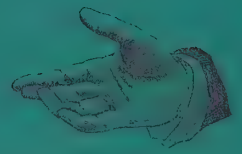
One stewardship tool with some limited application along the waterfront is the negotiation of conservation easements, which place voluntary permanent restrictions on the future uses of a property. Recent amendments to the Conservation Lands Act extend the ability (formerly limited to the Ontario Heritage Foundation) to hold and enforce conservation easements to municipalities, conservation authorities, and land trusts. This should encourage greater use of this technique in future to protect natural areas.

Stewardship activities provide considerable opportunities for volunteer involvement, such as tree-planting on industrial lands, and a wide range of other activities where community groups could enhance the waterfront by working cooperatively with private landowners.

Further detail on landowner contact and private land stewardship can be found in *Creative Conservation* by Hilts and Reid.

Jim Robb

The Finch Meander, Rouge River



Friends of Second Marsh:

Giving Nature a Helping Hand

There are many diverse natural areas along the north shore of Lake Ontario, but few are as diverse as Second Marsh, located in the southeast corner of Oshawa. A staging area for over 265 species of migratory birds and home to about 75 breeding species, as well as an array of herptiles, insects, and flora, Second Marsh is the largest remaining coastal wetland between Niagara and Presqu'ile. For most of this century its health was sacrificed for the sake of industrial and urban development. But in the 1970s, concerned citizens began a long struggle to save the marsh, and the result is a partnership of government, business, and community dedicated to restoring and preserving the vitality of this delicate waterfront habitat.

Settlers began farming in the Harmony-Farewell Creek watersheds in the early 1800s, and upstream erosion quickly led to sedimentation in the bay. Degradation of the marsh continued in the 1930s and 40s, when materials dredged from Oshawa Harbour were dumped there. In addition, treated effluent from the City of Oshawa was discharged into the marsh until 1971. It was about this time that plans to turn the marsh into a deep-sea port emerged, and an open bay with a depth of seven feet was created. Since then plans for a port have been abandoned and sedimentation has re-created a one foot deep wetland. Continued high sedimentation now threatens to fill in the marsh.

Efforts to save Second Marsh began in 1976 with the establishment of the Second Marsh Defense Association, a group of naturalists, conservationists, and other concerned citizens that has since changed its name to Friends of Second Marsh. The group played an instrumental role on the Second Marsh Steering Committee, a partnership of community groups, private corporations, school boards, and agencies from all levels of government, which was organized by the City of Oshawa in anticipation of regaining ownership of the marsh from the federal government. In 1991, the Committee, after broad public consultation, produced the Second Marsh Management Plan and launched a new era of cooperative partnerships.

A promise of 1.3 million matching dollars from Environment Canada kick-started the fundraising campaign, which has attracted the participation of the City of Oshawa, community groups, corporations, and individuals. In the winter of 1994-95, the marsh's outlet was relocated at the west end of the barrier beach, habitat islands were constructed, and a carp barrier was installed.

Though the Second Marsh Management Committee can trace its origins to a community group formed in the 1970s, the on-the-ground (and in-the-water) work has only just begun. As the health and diversity of the wetland returns, interpretive nodes, viewing platforms, and perhaps an education centre will be installed around the marsh. The educational and recreational facilities, including the Waterfront Trail, which skirts the area, will have minimal impact on the biological and ecological functions of the marsh. Through partnerships, the goal to regenerate and protect this sensitive habitat while creating opportunities for learning, hiking, and bird-watching, can be realized.

C. FUNDING AND INCENTIVES

C.1: Coordinating plans and projects with funding opportunities

One of the keys to the successful implementation of the Waterfront Trail over the past few years has been the coordination of the timing, design and funding of various local projects. As the Humber Bridge example demonstrates, even a single project can involve the coordinated actions of many agencies. In all cases, however, progress has not come about because of a new dedicated source of government funding allocated to the waterfront, but rather through the coordinated application of existing capital programs to waterfront projects.

Over the past two years, waterfront projects have proven their worth in receiving allocations from jobsOntario*Capital*, jobsOntario *Community Action*, and the Canada-Ontario Infrastructure Works programs. Other provincial programs such as Ministry of Transportation's highway construction allocations have contributed substantially to development of the Waterfront Trail.

The Greenway Strategy is a long-term vision, with actions that will occur over many years. It cannot and should not be tied to a single funding source or program; rather, as government capital and other funding programs at all levels evolve over the years, agencies involved in implementing waterfront activities will continue to seek opportunities to attract investment in priority projects. Continuing to prepare coordinated "packages" of related waterfront projects, similar to the Waterfront Trail provincial funding applications, will be an ongoing role for the Waterfront Regeneration Trust.

C.2: Directing economic incentives

Government agencies direct a wide range of economic incentives of various forms, through grant programs, subsidies, partnership arrangements, and tax policies. Some of these incentives can be employed to assist in waterfront regeneration, such as:

- Public spending on infrastructure projects along the waterfront can be positioned to encourage the maximum related private investment, and/or to trigger greater local involvement in community projects.

FUNDING AND INCENTIVES

Finding the dollars necessary to regenerate the waterfront will always be challenging. Although much has been accomplished in recent years, new approaches, greater creativity, and the involvement of a broader range of partners will be necessary. Techniques to finance the actions identified within this Strategy are summarized in three broad categories:

Daphne Svenningson

Monarch on thistle

- Conditions can be attached to approvals, grants, or other funding to ensure that the resulting activities will contribute in a positive way to achieving the objectives of the Greenway Strategy. Some programs do this already – the requirement for projects under jobsOntario *Community Action*, for example, to demonstrate strong community involvement, is consistent with Greenway objectives. In other areas such as agricultural subsidies, there is increasing interest in "cross-compliance" with environmental standards.

- The property tax system can be used to create incentives for protection of natural areas, archaeological sites, and public access. Under the Conservation Lands Act, private owners of provincially-significant natural areas now qualify for a provincial rebate of their property taxes, which is a valuable aid to stewardship. However, this program has been withdrawn from conservation authority lands, and is relatively limited in scope in the face of a new understanding of provincially-significant lands through the *Comprehensive Set of Policy Statements*. A more cost-effective incentive may be revisions to the Assessment Act to include a category of Conservation Lands, so that natural areas would no longer be assessed at residential or agricultural values.

- Amendments to the federal Income Tax Act should be encouraged to remove the tax penalty paid by those who donate properties to public agencies or charities. This taxation of a fictitious capital gain acts as a significant disincentive to public-spirited citizens along the waterfront and elsewhere. The 1995 federal Budget partially addressed this concern. Donors of some types of ecologically sensitive lands can now claim the resulting donation credits against 100% of their annual income, rather than the 20% limit which existed previously. This will assist some donors in avoiding a major tax penalty, but further reform in the capital gains area is also necessary.

C.3: Attracting private funds to waterfront projects

A community that appreciates the potential of its waterfront, and that is mobilized to help improve the health and accessibility of that resource, can be very effective in finding non-government resources to help achieve its goals. Already the waterfront has benefitted from the involvement of service clubs, industries, local landowners and citizens in waterfront projects. Working in partnership with community groups, there is also enormous potential for innovative fund-raising, from events and donations, to sponsorships, bequests, and foundation grants.

To attract private funds, waterfront agencies and organizations must communicate the community values of the projects they propose, identify clear opportunities where private funds are welcomed, and create appropriate mechanisms to handle funds from private sources. Corporate sponsors, for example, need projects that bring some form of public recognition of their involvement; private donors may need a donation receipt for tax purposes from a charitable organization. Identifying projects with clear benefits is all-important – for example, a senior's group might gladly fund a waterfront bench in a municipal park where they clearly see the benefits to their members.

Private-sector involvement in waterfront projects does not always have to be in the form of dollars. The donation of materials or services can be an important and effective way for industry to take part, and can have long-term benefits of increasing community involvement well beyond the short-term financial value. School boards and individual schools could participate by contributing volunteer labour to Greenway projects as part of outdoor education or environmental programs.

The endowment fund currently being investigated by the Waterfront Regeneration Trust would be another effective way to attract private funds to waterfront projects, by providing a vehicle for the involvement of individuals, community groups, and corporations.

Gary Fields, Waterfront Regeneration Trust

Commissioner David Crombie, Mayor Ann Mulvale of Oakville, MP Bonnie Brown, and Municipal Affairs Minister Ed Philip announce funding for the Oakville portion of the Waterfront Trail. Partners include jobsOntario*Capital*, the Town of Oakville, the Oakville Waterfront Festival and Oakville Arts Council volunteers, and the private sector.

Landplan Collaborative

R.C. Harris Water Filtration Plant, Toronto

DEFINING ROLES FOR WATERFRONT REGENERATION:

Responsibility for implementing the Lake Ontario Greenway Strategy cannot rest with any single agency. Rather, each of the agencies, municipalities, and groups with an interest in the waterfront needs to review its own area of responsibility and actions, to ensure that it is contributing in a positive way to achieving the vision and objectives of the Strategy.

The **Waterfront Regeneration Trust** has a unique role along the Lake Ontario waterfront, because of its statutory mandate to coordinate programs and policies relating to waterfront lands, to consult with the public, to advise the Province, and to facilitate the establishment of the Waterfront Trail and associated green spaces. The Trust will continue its leadership role in bringing waterfront municipalities and agencies together to address issues of common concern, coordinating funding proposals for waterfront regeneration projects, reporting regularly on progress and challenges, and promoting appropriate conservation and use of waterfront places.

Many **provincial agencies** are active in waterfront matters.The Ministry of Natural Resources has responsibility for provincial parks and Crown waterlots as well as the regulatory tools described earlier. MNR should take the lead in reducing the overlap among regulations and permit requirements for waterfront activities. Other Ministries have a role in administering their Province-wide programs within the Greenway, such as the Ministry of Culture, Tourism and Recreation's local grant programs, the environmental assessment and regulatory programs of the Ministry of Environment and Energy, the planning policy framework administered by the Ministry of Municipal Affairs, and the capital grant and bicycle policy programs of the Ministry of Transportation. Special funding programs such as jobsOntario *Capital* and jobsOntario *Community Action* also play an important role in waterfront regeneration.

Federal agencies with a significant role along the waterfront include the Harbour Commissions, which oversee major harbour facilities, and the Department of Fisheries and Oceans and Department of Environment, with interests and responsibilities in small craft harbours, fisheries, Great Lakes ecosystem health, wetland habitat conservation, and protection of migratory birds. Federal departments also have a responsibility to continue to coordinate their policies and programs with provincial agencies. In some cases, joint funding programs such as Canada-Ontario Infrastructure Works play a role in waterfront projects.

Conservation authorities have responsibility for conserving natural resources in their watersheds, and play an important role in waterfront planning. They are also major landowners in some parts of the Greenway, and have a strong role in natural core area and corridor protection, ecological restoration, watershed planning, and public access. They are expected to play a leading role in development of an integrated shoreline management planning system.

Municipalities (both local and regional levels) along the waterfront are the front line in delivering many waterfront programs, including the land use planning system, recreation facilities, water and wastewater treatment, and various regeneration projects. Their commitment and involvement has been a key factor in the success achieved to date, and will be critical to future actions.

The **academic community** will be encouraged to play a greater role along the Greenway, especially in educating students, researching the many remaining questions about how to create a waterfront that has ecological health, a sense of community, and economic vitality, and monitoring the results of regeneration actions.

First Nations peoples will be encouraged to play a stronger role in future, to raise public awareness of the long history of native use of the waterfront and its resources, and of the spiritual significance of waterfront sites.

The **business and industries** along the waterfront will also have an important role, both by creating opportunities for employment and economic growth, and by making parts of the waterfront more accessible and attractive.

Finally, the importance of **community groups and individuals** cannot be overlooked. An essential part of waterfront regeneration is the grass-roots involvement of people who live and work in the Greenway, many of whom care passionately about its future. From trail users, tree planters and tourist operators to environmental watchdogs, private investors, and service clubs, there are endless opportunities for people to get actively involved in regenerating the Lake Ontario waterfront.

Halton Region Conservation Authority (H.R.C.A.)

Summer sailboarding

Beyond the recognition of roles in implementing the Greenway Strategy, there is the question of establishing priorities, to decide which steps come next within the constraints of limited resources. In part, these questions are addressed in the companion document, *Lake Ontario Greenway Strategy: Next Steps*, which identifies regeneration goals and short-term opportunities and actions for landscape units along the Greenway.

The Steering Committee (see Appendix B), which represents the range of agencies and groups involved in the Lake Ontario Greenway, will continue to meet regularly to exchange information and experiences, discuss priorities, monitor progress, address common issues, and maintain the momentum towards waterfront regeneration.

Workshops sponsored by the Steering Committee will be held to provide opportunities for more technical discussions of Greenway topics. When needed, special workgroups will be formed to develop ideas and undertake many of the actions outlined in this Strategy.

The challenges of the Lake Ontario Greenway are great, often beyond the ability of any one individual, group or agency. But by working together with a shared vision, there is no doubt that the progress already made to regenerate the waterfront will be sustained and multiplied in the future.

Appendices a,b,c,d

Charity Landon, Waterfront Regeneration Trust

Rattray Marsh, Mississauga

Appendix A: Waterfront Natural Core Areas and Corridors

The following is a listing of natural core areas found along the Lake Ontario Greenway, as well as corridors which provide connections to the Niagara Escarpment, Oak Ridges Moraine or the historic Lake Iroquois shoreline.

It should be noted that in some cases, waterfront natural core areas are set within valley corridors while others are within east-west habitat corridors. They are shown on the chart as being "within a valley corridor" or "within an east-west habitat corridor" respectively. Together with other habitats and revegetated areas, these areas act as a conduit for species movement throughout the Bioregion.

East-west corridors include the Scarborough Bluffs, Rouge-Duffins wildlife restoration corridor, Bond Head Bluffs, Gage Creek Marsh-Carr Marsh, Spicer-Lakeport forest corridor, and Salem-Presqu'ile-Carrying Place forest/wetland corridor.

Further details on core areas and corridors are provided in Chapter 2, Landscape Biodiversity and in Chapter 3, Action 1.3. See also Map 10, Natural heritage system and aquatic objectives, for the locations of core areas and corridors.

Northumberland Tourism Bureau

MTRCA

NATURAL CORE AREAS AND CORRIDORS	CORE AREA	WITHIN A VALLEY CORRIDOR	WITHIN AN EAST-WEST HABITAT CORRIDOR	OTHER DESIGNATIONS ANSI*	WETLAND**	OWNERSHIP
Dundas/Hamilton						
Coote's Paradise	✓				Provincial	Public
Burlington						
Willow Point	✓					Private
Grindstone Creek Valley corridor						Public/Private
Hendrie Valley	✓	✓		Regional life science	Provincial	Public
Burlington Beach	✓					Public
Shoreacres Creek	✓					Public
Oakville						
Bronte Creek Valley corridor						Public/Private
Bronte-Burloak Woods–Sheldon Creek	✓					Public/Private
Lower Bronte Creek	✓	✓			Local	Public/Private
Coronation Park (part)	✓					Public
Fourteen Mile Creek Valley corridor						Public/Private
Fourteen Mile Creek/Baillie Estates	✓	✓				Private
Sixteen Mile Creek Valley corridor						Public/Private
Lower Joshua's Creek Valley (part)	✓					Public/Private
Mississauga						
Rattray Marsh	✓			Provincial life science	Provincial	Public
Lorne Park Prairie/Lornewood Creek (part)	✓			Regional life science		Private
Credit River Valley corridor						Public/Private
Lower Credit River	✓	✓		Regional life science		Public/Private
Stavebank Oak Woods	✓	✓		Regional life science		Public/Private
Cawthra Woods and Creek	✓			Regional life science		Public

NATURAL CORE AREAS AND CORRIDORS	CORE AREA	WITHIN A VALLEY CORRIDOR	WITHIN AN EAST-WEST HABITAT CORRIDOR	OTHER DESIGNATIONS ANSI*	WETLAND**	OWNERSHIP
Etobicoke						
Etobicoke Creek Valley corridor						Public/Private
Lower Etobicoke Creek/Marie Curtis Park	✓	✓				Public
Colonel Sam Smith	✓					Public
Mimico Creek Valley corridor						Public/Private
Humber Bay Park–Lower Mimico Creek (part)	✓	✓				Public
Humber River Valley corridor						Public/Private
Lower Humber River Marshes	✓	✓			Provincial	Public/Private
Toronto						
High Park Oak Woodlands	✓			Regional earth science Provincial life science		Public
Toronto Islands	✓			Regional earth science		Public
Don River Valley corridor						Public/Public
Don Valley Brickyard	✓	✓		Provincial earth science		Public
Cherry Beach	✓					Public
Tommy Thompson Park	✓					Public
Glen Stewart Ravine	✓					Public/Private

NATURAL CORE AREAS AND CORRIDORS	CORE AREA	WITHIN A VALLEY CORRIDOR	WITHIN AN EAST-WEST HABITAT CORRIDOR	OTHER DESIGNATIONS ANSI*	WETLAND**	OWNERSHIP
Scarborough						
Scarborough Bluffs corridor						Public/Private
Fallingbrook Woods	✓		✓			Private
Scarborough Bluffs & Bluffers Park	✓		✓	Provincial life and earth science		Public/Private
Guild Woods	✓		✓			Public
East Point	✓		✓	Regional life science		Public/Private
Highland Creek Valley corridor						Public/Private
Highland Creek Mouth & Stephenson's Swamp	✓	✓			Provincial	Public/Private
Highland Creek Swamp	✓	✓		Regional life science	Provincial	Public
Rouge-Duffins corridor						Public/Private
Rouge River Valley corridor						Public/Private
Lower Rouge Valley	✓	✓		Provincial life science and regional earth science	Provincial	Public/Private
Rouge Valley–Midsection	✓	✓		Provincial life and earth science		Public/Private
Rouge Valley–Upper Section	✓	✓		Provincial life and earth science		Public/Private
Pickering						
Petticoat Creek Valley corridor						Public/Private
Petticoat Creek (mouth to Sheppard Avenue)	✓	✓				Public/Private
Frenchman's Bay	✓				Provincial	Public/Private

NATURAL CORE AREAS AND CORRIDORS	CORE AREA	WITHIN A VALLEY CORRIDOR	WITHIN AN EAST-WEST HABITAT CORRIDOR	OTHER DESIGNATIONS ANSI*	WETLAND**	OWNERSHIP
Ajax						
Duffins Creek Valley corridor						Public/Private
Duffins Creek Marsh	✓	✓		Regional life science	Provincial	Public
Carruthers Creek Valley corridor						Private
Carruthers Creek Forest	✓	✓				Public/Private
Ajax Warbler Swamp	✓				Local	Private
Shoal Point Marsh	✓	✓		Regional life science	Provincial	Private
Whitby						
Cranberry Marsh	✓			Provincial life science	Provincial	Public
Lynde Creek Valley corridor						Public/Private
Lynde Shores/Lynde Creek Marsh	✓	✓		Regional life science	Provincial	Public
Corbett Creek/Thicksons Woods	✓				Provincial	Public/Private
Oshawa						
Oshawa Creek Valley Corridor						Public/Private
Pumphouse Marsh	✓				Provincial	Public
Farewell Creek Valley corridor						Public/Private
Second Marsh	✓	✓		Provincial life science	Provincial	Public
McLaughlin Bay	✓					Public/Private

NATURAL CORE AREAS AND CORRIDORS	CORE AREA	WITHIN A VALLEY CORRIDOR	WITHIN AN EAST-WEST HABITAT CORRIDOR	OTHER DESIGNATIONS ANSI*	WETLAND**	OWNERSHIP
Clarington						
Darlington Provincial Park	✓			Regional earth science	Provincial	Public
Tooley Creek Valley corridor						Private
West Side Creek Marsh	✓				Provincial	Private
Bowmanville Creek Valley corridor						Public/Private
Bowmanville Creek/Harbour/Port Darlington	✓	✓			Local	Public/Private
Soper Creek Valley corridor						Private
Wilmot Creek Valley corridor						Public/Private
Newcastle Marsh (Wilmot Creek/Foster Creek)	✓	✓		Regional life science	Provincial	Public/Private
Graham Creek Valley corridor						Private
Bond Head Bluffs corridor						Private
Bond Head Bluffs	✓		✓	Provincial life science and regional earth science		Private
Newtonville Creek			✓	Regional life science		Private
Newtonville Woods			✓			Private
Port Granby Creek Valley corridor						Private
Port Granby East Bluffs	✓					Private

NATURAL CORE AREAS AND CORRIDORS	CORE AREA	WITHIN A VALLEY CORRIDOR	WITHIN AN EAST-WEST HABITAT CORRIDOR	OTHER DESIGNATIONS ANSI*	WETLAND**	OWNERSHIP
Hope						
East Port Granby Ravine	✓					Private
Crysler Point Bluffs	✓			Regional life science		Public
Wesleyville Creek Valley corridor						Public/Private
Wesleyville Marsh	✓	✓		Regional life science	Local	Public
Wesleyville Ravines	✓	✓		Provincial life science		Public/Private
Port Britain Creek Valley corridor						Private
Willowbeach Marsh (Port Britain Marsh)	✓	✓		Regional life science	Provincial	Private
Otty Point Woods	✓					Private
Port Hope						
Port Hope Woods	✓					Private
Ganaraska River Valley corridor						Public/Private
Gage Creek Marsh-Carr Marsh corridor						Public/Private
Gage Creek Valley corridor						Private
Gage Creek/Peter Rock Marsh #2	✓	✓	✓		Local	Public/Private
Hamilton-Cobourg						
Carr Marsh	✓		✓	Provincial life science	Provincial	Private/Public
Cobourg Creek Valley corridor						Public/Private
Cobourg Beach-Cobourg Creek (part)	✓	✓			Local	Public/Private
Lucas Point Creek Valley corridor						Private

NATURAL CORE AREAS AND CORRIDORS	CORE AREA	WITHIN A VALLEY CORRIDOR	WITHIN AN EAST-WEST HABITAT CORRIDOR	OTHER DESIGNATIONS ANSI*	WETLAND**	OWNERSHIP
Haldimand						
Spicer-Lakeport corridor						Private
Spicer Lowland Woods	—		—			Private
Brookside Wetland			—		Local	Private
Barnum House Creek Valley corridor						Public/Private
Barnum House Creek (south of Hwy 2)			—			Private
Grafton Undulating Woods	—		—			Private
Chub Point	—		—			Private
Grafton Wetland	—		—		Local	Private
Shelter Valley corridor						Private
Lower Shelter Valley Creek	—	—	—		Local	Private
Wicklow Beach Wetland	—		—		Provincial	Private
Haldimand Conservation Area/Gravel Pit			—		Local	Private
McGlennon Point Wetland	—		—			Private
Lakeport Wetland	—		—		Local	Private
Lakeport Old Lake Belleville Shoreline	—			Provincial earth science		Private
Cramahe						
Colborne Creek Valley corridor						Private
Colborne Creek Wetland	—			Regional life science	Provincial	Private
Colborne Woodlot	—					Private
Salem-Presqu'ile-Carrying Place corridor						Public/Private
Salem Creek Valley corridor						Private
Salem Creek Woods (part)	—	—	—			Private
Salem Corners Swamp (Salem Woods)	—		—		Local	Private
Spencer Point Creek Wetland	—		—		Provincial	Private
Hunt & Beach Road Wetland (Popham Bay Wetland)	—		—		Provincial	Private
Union Road Woods			—			Private

NATURAL CORE AREAS AND CORRIDORS	CORE AREA	WITHIN A VALLEY CORRIDOR	WITHIN AN EAST-WEST HABITAT CORRIDOR	OTHER DESIGNATIONS ANSI*	WETLAND**	OWNERSHIP
Town of Brighton						
Popham Bay Woods			✓			Private
Brighton West Woods			✓			Private
Butler Creek Valley corridor						Public/Private
Township of Brighton						
Presqu'ile Provincial Park	✓		✓	Provincial life science	Provincial	Public
Presqu'ile Bay Wetland	✓		✓	Provincial life science	Provincial	Private
Brighton Woods	✓					Private
Carley Point Woods (part)	✓	✓	✓		Provincial	Private
Swing Bridge Woods	✓		✓		Provincial	Private
Smithfield Creek Valley corridor						Private
Smithfield Creek Wetland	✓		✓		Provincial	Private
Murray						
Lovett Swamp	✓		✓		Provincial	Private
Barcovan Swamp	✓		✓		Provincial	Private
Carrying Place Woods	✓		✓		Provincial	Private/Public
Dead Creek Marsh	✓		✓		Provincial	Private
Dead Creek Escarpment Woods	✓		✓			Private
Wooler Road Woods	✓		✓			Private
Twelve O'Clock Marsh			✓		Provincial	Private
Wellers Bay/Bald Head Island	✓			Regional life science	Provincial	Public

Source: Brownell, V. 1993. *Waterfront Natural Areas – Part 1*

*ANSIs, or Areas of Natural and Scientific Interest, vary in level of significance (ie. provincial, regional, and local) based on geological and ecological surveys. Earth science ANSIs are those that include bedrock outcrops, fossils or natural landforms. Life science ANSIs include a range of representative natural biological communities.

**Wetlands vary in level of significance and are classified from 1 to 7 based on biological, social, hydrological, and special features. Classes 1, 2, and 3 are provincially significant; classes 4 to 7 are locally significant.

Appendix B: Participants

LAKE ONTARIO GREENWAY STRATEGY STEERING COMMITTEE MEMBERS

(including former members and alternates)

David Crombie
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LAKE ONTARIO GREENWAY STRATEGY TEAM

The LOGS Team is composed of the chairs and coordinators of the workgroups as well as other WRT staff. It provided much of the focus and integration in the development of the Strategy. Several of the workgroups had more than one chairperson and coordinator during the course of their work.

Suzanne Barrett
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Secretary

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Tony Wagner
Director of Water Resources

STUDENT ASSISTANTS TO THE LAKE ONTARIO GREENWAY STRATEGY

The Waterfront Regeneration Trust Student Assistantship program provides educational opportunities and practical experience for students in their chosen or related field. The program allows the Trust to build relationships with educational institutions in the Greater Toronto Bioregion. It also contributes a wealth of academic talent, enthusiasm and fresh ideas to the work of LOGS and other Trust projects.

Students in the 1992/93 Program

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Geography & Environmental Studies, Wilfred Laurier University/University of Waterloo

Tim Smith
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Appendix C: Glossary and Acronyms

adaptive re-use
the process of converting an historic property to a new use; some modification to the property may be required

agrarian
relating to agricultural and rural activities

alongshore
parallel to and near the shore, usually within the littoral area

anadromous
fish species which swim up rivers to spawn, living in the lake the rest of the year

Anishnaabeg
Ojibway word for "people" or First Nations people

ANSI
Area of Natural and Scientific Interest, as identified by the MNR (see Appendix A for further description)

aquifer
subsurface materials that yield significant quantities of groundwater to the surface in a form where it is used by people or maintains base flow and storage levels in streams, lakes, and wetlands

backshore
the part of the shoreline that is usually dry, above the average water level, and bounded inland by the limit of storm runup

barrier beach
a beach, usually of sand or gravel, across the entrance of a bay or stream mouth

bioaccumulation
the process by which contaminants in the environment are accumulated in living organisms

biodiversity
a short form for biological diversity, referring to the numbers of species and the genetic variability of each species

bioregion
a short form for biological region: a region defined on the basis of physical and biological features

bioregional habitat corridor
a linear natural area that links habitats from the Lake Ontario shoreline to the Oak Ridges Moraine, Niagara Escarpment, or the Lake Iroquois shoreline, or links natural core areas along the waterfront, and which allows for the movement of species

biota
the plant and animal assemblage of a given area

biotic
relating to living elements of the ecosystem

bluff
a shoreline feature where the land rises steeply away from the water, generally to an elevation greater than two metres

boulder
rounded stone larger than cobble, often defined as greater than 25 cm in diameter

breaker
a wave that breaks or crests because of increasingly shallow depths

breakwater
a structure protecting a shore area or basin from wave action

CA
Conservation Authority

CLOCA
Central Lake Ontario Conservation Authority

COA
Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem

coastal processes
the physical processes in a coastal ecosystem, including waves, currents, winds, water levels and tides, drainage and groundwater, and sediment supply and movement

cobble
rounded stone, smaller than boulder, often defined as between 6 and 25 cm in diameter

cohesive
having the power of sticking together in a consolidated form (e.g. "a cohesive cobble/boulder shoreline")

coldwater fishery
a fish community adapted to wave exposed open coast and cold temperatures, including salmon, trout, whitefish, herring, yellow perch, and alewife

colonial waterbird
a bird that frequents the water, nesting in a colony or large group or community

concave
curved inwards

convex
curved outwards, rising into a rounded form on the outside

core area
see natural core area

corridor
a natural linear feature, providing for habitat connections and species dispersal, at both a regional and local scale

cultural heritage landscape
a place that exhibits physical characteristics or represents cultural and/or religious values of a community as a result of interactions between people and the natural environment

CVCA
Credit Valley Conservation Authority

CWS
Canadian Wildlife Service (Environment Canada)

demographic
relating to the study of populations

DFO
Federal Department of Fisheries and Oceans

DOE
Federal Department of the Environment or Environment Canada

dredging
excavating under water, usually to create or deepen a harbour or canal

drumlin
a Celtic word for little hill; a smooth oval shaped hill composed of glacial till

dune
a ridge or mound of loose, wind-blown material, usually sand

dynamic beach
an area of accumulated unconsolidated sediment that is acted upon by waves and wind action

ecosystem
a system composed of air, land, water, living organisms, including humans, and the interactions among them

embayment
an indentation in the shoreline, forming an open bay

embryo dune
an emerging dune in a dynamic beach system

endangered species (Ontario)
any indigenous species of flora or fauna that is indicated to be threatened with immediate extinction throughout all or a significant portion of its Ontario range

erosion
process of removal of shoreline and backshore material by natural processes (wind or water action)

estuarine
relating to the mouth of a river opening into the lake

fauna
a collective term for the animal species present in an ecosystem

First Nations
those communities and groups of people which have been resident in this area since prior to European contact; may also be defined as including those groups which fall under the federal Indian Act

flora
a collective term for the plant species present in an ecosystem

forage
pertains to food for animals (including fish)

foredune
a dune generally within the backshore or the area of storm runup

GLWQB
Great Lakes Water Quality Board

gravel
small rounded stone, often defined as between .5 and 2 cm in diameter

GRCA
Ganaraska Region Conservation Authority

green infrastructure
an open space framework, based on natural systems and including natural habitats, landforms, aquifers and recharge areas, heritage landscapes, parks, trails, and archaeological sites

greenway
a linear landscape that is identified for management purposes to integrate environmental regeneration and recreation opportunities into the urban and rural fabric

groyne
a shore protection structure built out at an angle from the shore to trap sand and to protect the shore from erosion by currents and waves

headland
an erosion resistant promontory, either natural or constructed by humans, extending into the lake

herptile
a reptile or amphibian

HRCA
Halton Region Conservation Authority

hydrological
relating to the study of water

IJC
International Joint Commission

ILSRBC
International St. Lawrence River Board of Control

infrastructure (municipal)
a framework of municipal services including roads, sewers, water supply systems, and other utilities

interior forest
a block of forest buffered from the nearest edge by at least 200 metres

interpretive initiative
program, sign, plaque, written material, or other activity designed to add meaning, understanding and enjoyment to the visitor's experience

inter-regional trail
a trail that links regions and/or regional trails to one another; examples include the Waterfront Trail, the Bruce Trail, and the Ganaraska Trail

ISMP
Integrated Shoreline Management Plan

lakefill
the placement of solid material (loose earth, rubble, broken concrete, etc.) in a water body for the purpose of shoreline protection or stabilization, land creation, or disposal of dredged material within a confining structure

Lake Ontario Greenway
a greenway encompassing the lands and waters along the shoreline of Lake Ontario between Burlington Bay and the Trent River, generally extending inland to the first major rise in elevation and offshore to a depth of about 10 metres

LaMP
Lakewide Management Plan

landscape unit
a land based segment of the Lake Ontario Greenway, displaying homogeneous or recurring patterns of environmental characteristics or land use, with boundaries based on an understanding of shoreline, landform, vegetation, cultural, and land use characteristics

littoral
pertaining to or along the shore, particularly to describe currents, deposits, and drift

littoral drift
the movement of sediment along beaches and in the nearshore zone by the prevailing currents and waves

LOTMP
Lake Ontario Toxics Management Plan

LTRCA
Lower Trent Region Conservation Authority

MCTR
Ontario Ministry of Culture, Tourism and Recreation

MEDT
Ontario Ministry of Economic Development and Trade

metabolism
the total of chemical changes and processes which are undergone for the purposes of normal functioning of an organism

metabolite
the broken down derivative of the parent compound

migrant
a person or animal that is moving from one place to another or changing habitat

mitigation
a process of minimizing the adverse impacts of a project on the environment

MMA
Ontario Ministry of Municipal Affairs

MNR
Ontario Ministry of Natural Resources

MOEE
Ontario Ministry of Environment and Energy

MOH
Ontario Ministry of Housing

MTRCA
Metropolitan Toronto and Region Conservation Authority

natural core area
a natural area that protects the most significant natural habitats and provides representation of landforms and biotic communities

naturalization
a process for the introduction and restoration of natural landscape elements by encouraging natural processes and the development of plant communities such as meadows, shrub thickets, wetlands and forests

nearshore
an indefinite zone extending lakeward from the average water level, where wave action and currents directly influence the shoreline

OGTA
Provincial Office for the Greater Toronto Area

oligotrophic
a state of being low in nutrients

onshore
the part of the shore that is landward of the limit of storm runup

organic (chemical)
containing or combined with carbon

particulate
a very small piece of matter

PCB
polychlorinated biphenyl

pelagic fish
free roaming; of the open water

phytoplankton
plant plankton

plankton
very small drifting organism in the water in oceans, rivers or lakes

RAISON
Regional Assessment by Intelligent Systems on Micro Computers

RAP
Remedial Action Plan

recharge area
an area where there is a significant contribution of water to the groundwater through infiltration from the surface of the land

regeneration
the protection, enhancement, and restoration of ecological health, community well-being, and economic vitality

regional trail
a major trail within a region, often linking a number of smaller trails

regulatory shoreline
the furthest landward limit of the combined regulatory standards for flooding, erosion, and dynamic beaches

revetment
a facing of stone, concrete, etc. built to protect the shoreline against erosion

ridge line
a distinctive linear elevated feature, usually natural, on the landscape, seen from a distance and often created by features such as vegetation patterns, hills, or the brow of an escarpment

riparian
bordering a lake or water course

salmonid
a fish of the salmon and trout group

sediment
solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity or ice

sedimentary rock
rock that is created from sediments that are laid down and compacted over a very long period of time

shale
a sedimentary rock formed from clay, splitting readily into thin flat pieces

shingle
any beach material coarser than ordinary gravel, especially any having flat or flattish pebbles

shoreline unit
a segment of the shoreline, defined in the Lake Ontario Greenway Strategy on the basis of substrate type and coastal processes. Nine shoreline units have been identified between Burlington Beach and Wellers Bay

slumping
failure of a bluff slope with a mass movement downward

staging
gathering and assembling in a group for the purpose of resting or waiting for others to arrive, often while migrating

stone-hooking
a process of removal of stones from the bottom of Lake Ontario during the nineteenth century, for use in construction

storm runup
the water that reaches inland during a storm, higher than the average water level, as a result of wind and wave action

stormwater
water which has been deposited in the form of rain, sleet, or melted snow, and which picks up contaminants while flowing overland

substrate
a foundation or underlying layer

subwatershed
a subunit of a watershed, often defined as the drainage area of a tributary of a watercourse

sympathetic modification
the modification of an historic building or site for re-use in such a way as to maintain the value or character of the building or site as part of the heritage landscape

threatened species (Ontario)
any indigenous species of flora or fauna that is indicated to be experiencing a definite non-cyclical decline throughout all or a significant portion of its Ontario range, and that is likely to become an endangered species if the factors responsible for the decline continue unabated

till
a heterogeneous mixture of sand, cobble, and boulder deposited under a glacier

TREO (Workgroup)
Tourism, Recreation and Economic Opportunities (Workgroup)

tributary
a contributing stream or river; one that runs into another or into a lake

vascular plant
a plant that contains tubular vessels, including all herbs and woody plants

view
a range or field of sight or vision

vista
a view framed or enclosed by structures and/or landforms

visual unit
a unit identified on the basis of its natural and cultural heritage, scenic resources, and interpretive potential; 52 visual units have been identified within the Lake Ontario Greenway

vulnerable species (Ontario)
any indigenous species of flora or fauna that is particularly at risk because of low or declining numbers, occurrence at the fringe of its range, or in restricted areas, or for some other reason, but is not a threatened species

warmwater fishery
a fish community adapted to sheltered habitats and cool or warm water, including pike, bass, walleye, bullhead, carp, sucker, and minnows

water-dependent business
a business activity that requires access to water for its operations, including water for its transportation or cooling

water-enhanced business
a business activity that does not require water access for its operations, but benefits from a waterfront location

watershed
the area drained by a river or lake system

wetland
land where the water table is at, near, or above the land surface long enough to promote the formation of wet soils or to support the growth of aquatic plants

WRT
Waterfront Regeneration Trust

Appendix D: Bibliography and Toolkit

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TOOLKIT

The Waterfront Regeneration Trust, in conjunction with many of its partners, is compiling a toolkit of guidelines, checklists, and management strategies to assist in the implementation of the Actions of the Lake Ontario Greenway Strategy. Many of these toolkit items are complete at time of printing of the Greenway Strategy, while others are still in draft form. It is anticipated that the toolkit will be complete by the fall of 1995.

Cultural Heritage

- Cultural heritage conservation manual (working title) (Ministry of Culture, Tourism and Recreation, Ministry of Municipal Affairs, and Waterfront Regeneration Trust)
- Cultural heritage themes

Natural Heritage

- A natural heritage strategy for the Lake Ontario greenway
- Restoring natural habitats (a manual for habitat restoration in the Greater Toronto Bioregion)

Shoreline Management

- Checklist for shoreline treatment
- Collection of goose management initiatives
- Demonstration terms of reference for an Integrated Shoreline Management Plan
- Guide to shoreline approvals for landowners
- Management and disposition of Lake Ontario crown shorelands within the Greater Toronto Bioregion
- Proposed components of a standardized database
- Shoreline management workgroup report
- The Daily Honker (a Canada Goose fact sheet)

Site Remediation

- A guide to creating a historical land use inventory of potentially contaminated sites for municipalities in Ontario (Canadian Urban Institute and City of Toronto Environmental Protection Office)
- Remedial methods handbook
- Toward an historical land use inventory for the Lake Ontario greenway

Tourism, Recreation and Economic Opportunities

- A tourism, recreation and economic strategy for the Lake Ontario greenway
- Heritage shores: Cobourg, Port Hope, Rice Lake – the making of a destination area
- Market data for projects along the Lake Ontario waterfront from Burlington to Trenton
- Tourism and recreation market and product trends: final report

Waterfront Trail

- Accessibility audit (a checklist)
- Design guidelines for the waterfront trail
- Maintenance guidelines for the waterfront trail
- Signage guidelines for the waterfront trail
- Trail user monitoring study
- Waterfront trail alignment (a set of maps)
- Waterfront trail: liability and risk management issues

General

- Lake Ontario greenway strategy: next steps

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